

COMPUTERWORLD

Middleware to go mobile

By Craig Stedman and Suruchi Mohan

Seeking yet another avenue into the IS mainstream, IBM, Digital Equipment Corp. and other vendors of message-oriented middleware plan to use the emerging technology to connect corporate road warriors to their home office networks.

IBM is designing a streamlined, mobile version of its MQSeries middleware that should be ready for beta testing late this year, officials confirmed last week. Meanwhile, Digital plans to get its DECmessageQ software in shape for wireless data transmissions this summer.

Patience is in order, however, as these mobile strategies remain hazy. Nonetheless, the promise of mobile support is intriguing to information systems executives at several companies



Chicago Mercantile's Steve Goldman, Mobile middleware would allow trading floor priests to be sent from handheld PC devices

Middleware, page 15

Cybershoppers cruise past Internet retailers

By Ellis Booker

Lots of foot traffic but precious little buying.

That's the story at cyberspace stores these days, according to analysts and operators of electronic storefronts and so-called cybermalls.

Dozens of electronic malls have made spotty appearances in recent months, offering Internet surfers the ultimate convenience of popping into a widening assortment of stores to buy goods on-line via 800 numbers.



CyberShopper, page 26

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HP unifies line

Workstations, servers to be linked via HP/UX 10.0, new PA-RISC chip

By Jean S. Bozman and Mark Hafner
FALMOUTH, CALIF.

In a series of announcements beginning next month, Hewlett-Packard Co. will forge the final links needed to bridge its workstation and server architectures, industry analysts said last week.

HP plans to launch a barrage of products this quarter that will leverage the HP/UX Version 10.0 operating system as a common element for its entire Unix line, sources said.

This latest version of HP/UX is expected to

Seeking the lead

HP hopes to leverage itself as a \$25 billion vendor against \$5 billion Sun Microsystems to take the Unix workstation lead. One hitch in its plans, analysts agreed, would be delivery of HP/UX 10.0.

boast symmetrical multiprocessing performance on systems from the midrange to the high end of the Unix server line. It will also allow HP workstations to support multiprocessing for the first time.

Until now, minor differences between server and workstation versions of HP/UX have been an administrative headache for users. The new Unix version will unify HP's product line-up from the low-end HP 312 workstations to the high-end T300 Unix servers.

But HP's ambitions please may already have

HP, page 129

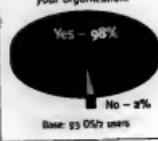
OS/2 users flirt with Windows

By Ed Scannell

While many key OS/2 shops are sticking with plans to roll out development projects under OS/2 Warp, some are starting to seriously evaluate Windows NT and Windows 95 as platforms for future development.

This bout of doubt appears driven by renewed concerns about the scarcity of robust 32-bit OS/2 applications. Also problematic is the lack of a detailed road map for OS/2's future. This lack of direction comes at a time

IBM's vulnerability on the OS/2 front is underscored by the overwhelming presence of Windows at its customer sites. Do you use Windows/DOS or your organization?



when the commitment to deliver products for the two Microsoft Corp. environments is growing among the leading application and object tools developers.

"As we look at the promise of object technology and where those components will be available, as well as the availability of personal productivity applications, it appears the architecture is going the way of Microsoft," said Joseph Correia, a vice president in the information systems department at The Travelers Cos. in Hartford, Conn., which has deployed about 19,000 copies of OS/2.

"IBM has not done a good job at laying out plans for specific functionality beyond Warp. So if I am a corporate developer,

OS/2, page 16

Chargeback methods

Client/server costs hard to divvy up

By Rosemary Cusack

That old-fashioned business of chargeback — tracking computer system usage and billing users or departments for it — is just not the simple math it used to be.

As information systems managers struggle to get a grip on client/server and distributed computing costs, the need to better record system usage grows more critical. Many users are now looking for ways to carry over mainframe chargeback methods to the distributed world.

But the old methods do not translate easily. Traditional chargeback procedures fail to take into account the variety of new system components for client/server computing. Even worse, few chargeback software tools have been redesigned for the distributed world.

"We are trying to resolve this problem," said Terry Tung, a senior IS manager at Morrison-Knudsen Corp. in Cleveland. The company has

migrated to a client/server financial system from Platinum Software Corp. in Irvine, Calif.

"We don't believe that the way we are doing

Client/server, page 129

INTERNET tough GUYS

Internet champions at First Chicago, Cohen & Gadjoski and BCA/Unisys are working to bring more men into the market. See Page 100

Pat O'Rourke's Men Category

See Page 100

January 23, 1995



Get a GRIP On your NETS

ENTERPRISE NETWORK MANAGEMENT will rapidly change from a centralized setup to a distributed framework. The major vendors are rolling out new strategies this year, beginning with Sun Microsystems next Monday. Find out how users rate this shift in **CWS'S GUIDE TO ENTERPRISE NETWORK MANAGEMENT**. Page 88.

NEWS

■ Novell tries to shore up a weakness in its "pervasive computing" strategy: application servers. *Page 4*

■ Intel's Pentium replacement process shifts into full gear. *Page 6*

■ The utilities available in Microsoft Exchange are not enough for users; they want SNMP. *Page 10*

■ The Solitaire purge is on, with government agencies joining the crackdown on PC games in the office. *Page 12*

■ Videoconferencing and standards battling will be all the rage at ComNet. *Page 14*

■ Vendors scramble to extend the life of Token Ring networks. *Page 14*

■ BellSouth ditches Oracle in favor of Sybase for interactive interactive TV system. *Page 16*

DESKTOP COMPUTING

■ Motorola introduces a new personal digital assistant (PDA), while Hewlett-Packard prepares a fall release of a new class of PDAs. *Page 27*

WORKGROUP COMPUTING

■ Lotus will use its Lettessphere meeting to promote Notes as an application platform. *Page 47*

ENTERPRISE NETWORKING

■ Users are in for a rude awakening if they believe third-party vendors

How do you measure up?

How does your IS department compare to the Computerworld Premier 100? Fill out the Premier 100 survey and we'll send you a free report showing how your operation compares to the Premier 100 averages. Consolidated information from the surveys we collect may be published in a future Premier 100 issue. Send a request on company letterhead to Paul Gilts, Editor, Computerworld, 375 Cochituate Road, Falmouth, Mass. 02540 or E-mail to survey@cw.com.

who claim that their applications "snap in" to high-end network management platforms. *Page 87*

LARGE SYSTEMS

■ A lawyer offers advice for negotiating solid software deals. *Page 85*

APPLICATION DEVELOPMENT

■ PowerBuilder 4.0 is not exactly perfect, but overall it gets good reviews. *Page 73*

MANAGEMENT

■ Pennsylvania's Agile Web and California's CommerceNet haven't yet delivered on promises of increased responsiveness and competitive advantages for members. *Page 87*

MARKETPLACE

■ Network management tools often go unused because of tough learning curves and difficult installation. *Page 119*

COMMENTARY

■ Bill Luberis says Kmart shouldn't blame its woes on its very capable former CEO, David Carlson. *Page 32*

■ Attorney Robert Charles warns that liberal rules will force users and on-line service providers to consider the dangers of life in an on-line world. *Page 33*

■ Laurence Best says companies should stop building software with the learn-from-disaster method. *Page 53*

■ Jean Bozman says Digital users may find themselves boxed in when making the tough decision about migration from the OpenVMS operating system. *Page 47*

Don't miss...

■ Just perfect! A 10-year study reveals that 25% of those in the workforce are perfectionists to some degree — a state that can eventually lead to health problems. *Page 107*

■ Job hunting? Recognize that the differences between on-line resumes and traditional paper versions are subtle but important. *Page 56*



Cumberland Island, Georgia

Turn Off, Tune Out, Drop In

Sunt out? Need to get away? Veteran business and travel writer Melanie Menagh offers some choice tips on where to go on vacation to unplug and unwind.

Management, *page 46*

Calendar *Page 86*

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Editorial/Letters to the editor *Page 32*

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Executive Briefing

Don't throw out that old chargeback system you used to measure mainframe resource usage by your client departments. Many users are exploring ways to carry over mainframe chargeback methods to a distributed world. Managers say they recognize the need for chargeback, but that the tools to do it are lacking. *Page 1*

Kmart names Virginia A. Rago as its new CEO. Rago, who joined Kmart as vice president of store systems development six months ago, will face decisions such as whether to continue plans to overhaul the troubled retailer's information systems. *Page 8*. Meanwhile, Computerworld editor Bill Luberis lauds Rago's predecessor, David M. Carlson, who recruited Rago and continues to praise her. *Page 32*

Hewlett-Packard is forging the final links needed to bridge its Unix workstation and server architectures and is planning a barrage of product announcements designed to leverage the HP/UX Version 10.0 operating system as a common element for its entire Unix line. *Page 7*

When the Vermont Teddy Bear Co. set up a World Wide Web page last summer, the page received 15,000 visits in four hours. But six months later, the page is gone and the toy maker is concentrating on more traditional marketing. That's how it goes with e-commerce, where operators of electronic storefronts have found lots of foot traffic but little buying. *Page 1*

The Software Engineering Institute drafts a five-step blueprint for improving the neglected area of "people management" in application development shops. *Page 73*

On site this week: Campbell Soup has begun its most aggressive IS project ever: a \$30 million client/server-based customer service system that is expected to save the company \$18 million annually. Page 4. Bank subsidiary Liberty Payment Services and UPS Worldwide Logistics are leveraging each other's business and technical acumen as together they create a niche in the check-clearing market. *Page 66*

The 5th Wave by Rich Tennant.

Although Phil enjoyed owning a multifunction PDA, he wished the vibrating pager had been more elegantly designed.

SPOTLIGHT



The UNIX System Sort

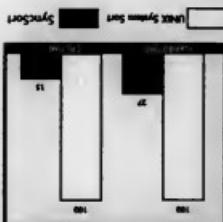
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text - slowly!
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is System Sort isn't one of them.
UNIX has its advantages, but

Multi-type	NO	YES
Sort Database	NO	YES
REPLIC	NO	YES
Subsort Addl.	NO	YES
String Sort	NO	YES
Character Sort	NO	YES
Binary Sort	NO	YES
Text Sort	NO	YES
ASCII Text	NO	YES
Reorder Sort	NO	YES
Random Sort	NO	YES
SyncSort	NO	YES

FUNCTIONS



Mmm, mmm, cost-effective

Campbell's system revamp on front burner for \$18 million in annual savings

By Ellis Booker

The recipe for their information systems overhaul will cost \$30 million, but Campbell Soup Co. executives said last week they expect a sweet reward: annual savings of more than \$15 million.

"This is the most aggressive project we've ever undertaken," said Harry Wallness, vice president of MIS at the Camden, N.J., food manufacturer. And he said he can beat his 15-month timetable for deployment.

Wallness is referring to Project Compass, which kicked off a couple of months ago. Its charter is to streamline Campbell's customer service, order management and logistics systems across its business units in the U.S. and Canada by year-end on the company's mainframes.

The biggest savings will come from "pulling together all the aspects of the business around a unified order management and supply chain system," said Jane Blodde, a senior industry analyst at Benchmarking Partners, Inc. in Cambridge, Mass. She has been consulting with Campbell on the project for the past eight months.

A reduction in paper processing and often-duplicated administrative steps will equate to faster and more accurate orders, she explained. By integrating their supply chain systems, the various units can move inventory more efficiently. And by more carefully managing promotions, the company can reduce selling costs, she added.

From hours to minutes

As part of the project, Campbell last week announced a \$3 million contract with Industri-Matematica, Inc. in Tarrytown, N.Y., for its System ESS, which uses an Oracle database to manage its order management system, is an integrated, Unix-based ordering management system.

Campbell said it expects the new software platform to reduce the time it takes to process and validate a customer order from hours to minutes.

The company is counting on more focused and better customer information and is planning to add an information component to the customer relationship. "More accurate transactions between

ourselves and our customers means more accurate invoicing and improved customer service," Wallness said. "That is, delivering what the customer wants, when he wants, at the price he expects."



Campbell's will be able to move inventory more efficiently with integrated supply systems

The result of this will be improved cycle time, the IS executive added.

Industri-Matematica beat out SAP America, Inc.'s R/3 system for the bid, company officials said. But Wallness said the Industri-Matematica system is just one piece of the Compass project, which is deliberately aimed at a "best-of-

breed" approach rather than focusing on one supplier.

For instance, instead of going with a Unix-based system, Campbell gave the and last June to an AS/400 vendor — Chicago-based System Software Associates, Inc. — as the corporate standard for its 50 manufacturing sites worldwide. Campbell will use System Software's BPCS/AS products.

"To make the transition to [client/server manufacturing] will have been a monumental process," Wallness said, adding that he is confident the company can achieve interoperability without a single integrated system. The goal is to link discrete systems with networking and middleware and eventually an enterprise system.

Wallness said he will achieve cross-platform integration as he makes the transition from the SNA corporate network to TCP/IP and through the use of message-oriented middleware.

Campbell has not disclosed that middleware strategy yet, although Wallness revealed he has picked IBM's integrated Systems Solutions Corp. to handle the systems integration job on Compass. That contract has yet to be signed, and its worth was unavailable. Separately, Campbell has put client/server applications in its sales and marketing organization using a relational database from Sybase, Inc. in Emeryville, Calif.

AT&T GIS to resell NetWare, UnixWare

By Laura DiDio

Novell, Inc. will soon take its first long-overdue steps toward shoring up the most glaring weakness in its "pervasive computing" strategy — applications servers — by inking a deal under which AT&T Global Information Solutions will resell NetWare and UnixWare.

Also, at the ComNet show in Washington tomorrow, Novell and IBM's Networking Systems Group will jointly announce that IBM's NetView will be able to manage Novell's UnixWare servers.

Dayton, Ohio-based AT&T GIS's decision to resell and market NetWare and UnixWare fits the first time a major systems vendor has lined up behind the UnixWare platform. The AT&T GIS reseller agreement also evens the score somewhat for Novell because AT&T GIS has been writing Microsoft Corp.'s Windows NT Server, said Novell's Bill Mason, director of partner marketing at the NetWare Products Group.

Taken separately, neither of these announcements is earth-shattering. But they are must-do action items that lend "tremendous credibility" to Novell's long-dormant overall applications server strategy, users and analysts said last week.

Novell, they said, must do this within the next 12 to 18

months or it will lose momentum to Microsoft. In the short term and, worse, risk user defection over the long term. Specifically, Novell needs to entice several independent software vendors to write a broad range of back-office services, including database, messaging, communications and multimedia.

The upcoming UnixWare announcements may sugar the beginnings of that strategy. "It's about time," said Steve Austin, MIS manager at Helicopter Support, Inc. in Orange, Conn. "We wanted to see an applications strategy from Novell last year. It's disappointing that it's taken so long."

Developing applications quickly and efficiently is crucial to Helicopter Support's continued growth, Austin said. If Novell doesn't have applications or database server solutions, someone else will. The door is definitely open for NT Server to gain a foothold here," Austin said.

The Novell announcement is good news, but two years is too long to wait for Super NOC," said Richard Buchanan, an analyst at Forrester Research, Inc. in Cambridge, Mass.

A recent Forrester Research report, "Server Operating System Showdown," predicted that Unix and Windows NT Server will compete for the market lead in database and applications servers with NetWare lagging far behind (see chart). That is because the underlying architecture of NetWare cannot "match NT or Unix in the application server arena," Buchanan said.

The report, based on interviews with 50 users, said

4% of information systems managers said they will use NetWare as their database/application server by 1996.

Novell's database server strategy consists of porting databases to run as NetWare Loadable Modules (NLM) from 14 vendors such as Oracle Corp. in Redwood City, Calif., and Sybase, Inc. in Emeryville, Calif.

Bob Sakakoeny, an analyst at the Aberdeen Group in Boston, said the strategy has not resulted in a large number of user installations. "There's no critical mass.

The database NLM users do seem to be reasonably satisfied though," he said.

One such user is Bob Kline, systems engineer at Caterpillar, Inc. in Peoria, Ill., which uses Novell's OracleWare NLM as its primary database server.

"The OracleWare NLM database server is fast, very stable and cost-effective. Network performance has increased since Caterpillar installed the OracleWare NLM," Kline said.

Other users and analysts said Novell's 14 OEM database partners are not enough.

"I don't see us switching from NetWare to OracleWare, we have 44,000 users committed right now," said Joe Lawless, a systems programmer at United Parcel Service, Inc. in Mahwah, N.J. UPS does run an Oracle NLM in stand-alone mode as a dedicated database server, but it "won't deploy NetWare as an application server" because the strategy is not clear, Lawless said.

Kline added that the low cost of NT Server and the seamless integration between Microsoft's FrontOffice and BackOffice suites provide a compelling argument.

Choosing NT over NetWare: some case studies. See page 57.

Correction

The Jan. 16 In Depth article erroneously reported that United Parcel Service, Inc. was using software from Remedy Corp. in Mountain View, Calif. for help desk and trouble-ticketing functions. UPS uses software from Indianapolis-based Software Artistry, Inc. for those tasks.

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**COMPUTER
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Pentium swaps accelerate

By Jalkumar Vijayan

Four weeks after Intel Corp. said it would replace all flawed Pentium processors unconditionally, the company has shifted into high gear.

Last week the chip maker said it had finished lining up third-party service providers, in the U.S. and other parts of the world, to handle processor replacements (see chart).

A spokeswoman at the Santa Clara, Calif., company claimed the manufacturing cutover to the updated processor had already been completed and that high-volume shipments to systems vendors, service providers and customers are under way. So far, Intel claims to have "shipped thousands of updated processors," although firm numbers were not available.

Answering user pleas

Most of the major systems vendors — such as Gateway 2000, Inc., Dell Computer Corp., IBM and Compaq Computer Corp. — said last week they are shipping bagged systems to customers and replacing flawed processors for users upon request. Estimated requests for replacements have ranged from 5% to 10% of vendors' respective

Pentium installations.

According to figures from Work Group Technologies, Inc., in Hampton, N.H., an estimated 4½ million Pentium-based systems had been installed worldwide — 1.8 million in the U.S. — by the end of 1994.

Intel expects the entire replacement process to take another two months, although analysts predict it will take longer.

"Nothing much is being heard about the replacement process, so I guess things must be going well," said David McCarron, an analyst at Mercury Research, Inc., in Scottsdale, Ariz.

For those adventurous enough to attempt it themselves, Intel has outlined a seemingly simple replacement process. In general, users need to open the system, ensure proper grounding to avoid static electricity, lift a lever, remove the old chip, insert the new chip, close the lever and replace the system chassis.

Some users with a technical background who have attempted the replacement process called it a cinch.

"It took me about 20 minutes total to replace the chip since I was being very careful, and I had to pull out a card to get better access to the CPU.... It was easier than adding an expansion card

to the system," said Ernie Pitarrelli, a scientist at Computer Sciences Corp. in Greenbelt, Md.

However, those who are less knowledgeable about a computer's innards are advised to have a professional replace the chip, analysts said.

Worldwide, there are hundreds of manufacturers of Pentium-based systems that use a wide variety of heat sinks, sockets and motherboards. Many systems vendors have customized designs that would make the replacement process vary.

A case in point is Dell Computer Corp.'s Pentium-based systems. The heat sinks that Intel supplies along with its replacement processor are not sufficient for the air flow characteristics of the Dell design and could fry the processor if not properly installed. Similarly, differences in sockets, electrical specifications and accessibility of the processor make the task of replacing it differ in each case.

"We are asking that customers get their processors replaced by a company-authorized service provider," a Compaq spokeswoman said. Like other major desktop vendors, Compaq is treating the replacement as a standard warranty issue and sending technicians to sites to replace the chip.

IBM, which was the first to announce a no-questions-asked replacement policy, said last week that it was sending technicians to Pentium customer sites, even if those sites had not actually asked for replacements.

The new math

The latest Pentium math is just in. One floating-point flaw plus thousands of angry users equals \$475 million.

Intel last week said it would be setting aside that amount in a one-time charge to cover replacement costs associated with its flawed Pentium processor. Last week, the chip maker said the charge, taken against fourth-quarter earnings, would cover all material and replacement costs.

Some analysts argued that Intel was being overly cautious in its estimates.

"Intel is just making sure that it doesn't have to take another charge because of this problem some time in the future," said David Wu, an analyst at S.G. Warburg & Co. in New York.

Chip analysts such as Dean McCarron at Mercury Research in Scottsdale, Ariz., however, maintained the figure was in line with earlier estimates.

Mercury Research, which had projected a \$500 million charge, estimated it will cost Intel \$100 in material costs per chip and another \$150 in associated replacement costs per chip. The company also estimated that Intel may have to replace as many as 2 million flawed processors.

Despite the substantial charge, Intel posted record revenue of \$11.52 billion for 1994, up 5% from the \$9.75 billion for 1993. As a result of the \$475 million charge, earnings dipped slightly to \$2.29 billion from \$2.30 billion in 1993 — roughly 7 cents per share.

—Jalkumar Vijayan

Compaq tries to regain notebook throne

By Michael Fitzgerald

Compaq Computer Corp., which created the high-end notebook market, lost its grip on the highly profitable market last year, largely alienating corporate users in the process. The world's largest PC maker is now actively revamping its efforts, which may signal good things for users in the year ahead.

Houston-based Compaq slipped from No. 1 to No. 2 in the market in 1994 (Toshiba, America Information Systems, Inc., took the lead), and third-ranked IBM is hot on its heels. Compaq's market share for the year actually grew, but it sagged badly in the second half, analysts said, indicating that users began to turn away.

Compaq not only fell behind the technology curve last year but hadly botched its high-end shift from the LTE Late to the LTE Elite line, leaving customers waiting up to several months.

Grass is always greener...

One information systems manager at a large multinational food company said his company is sticking by Compaq but the vendor's performance in the last year "is a big disappointment to me." The manager, who asked not to be named,

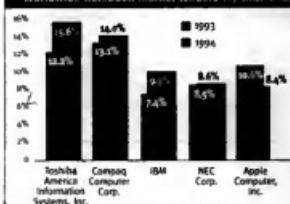
said that while Compaq's problems are "not killing them," his company was looking at other vendors' products as a result.

Sharon Frainic, a senior business manager at Compaq, acknowledged that "there [was] a lot of dissatisfaction" among Compaq's customer base, particularly over its stumbling transition to the Elite. After introducing the product, Compaq stopped shipping the Lite but users couldn't get the Elite out the door on time; it also had bugs with the product for most of the year.

In response to analyst claims that the company had become complacent in the notebook market, Frainic pointed out that Compaq in 1994 revamped its high-end and value-class corporate notebook lines and introduced two products, the Aero subnotebook and Concerto pen-and-keyboard convertible. She said Com-

paq is "absolutely going to pick up our pace" in 1995, with new and refreshed products. Several of these will come out in the next few weeks, she said.

Worldwide notebook market leaders (by shipments)



Source: International Data Corp., Framingham, Mass.

Among them are the following, according to the sources:

■ A refreshed Contura Aero subnotebook and a possible complete redesign and renaming of the product. This will address the Aero's main problems in the market, including a subpar color screen and underpowered chip.

■ The Contura 410, an upgrade to the value-class Contura line. Available in Europe, this product features a 25/50-MHz 486DX2 processor and brings the product family in line with the competition in the high-volume value part of the market.

■ Later in the first quarter, a new high-end LTE Elite that will include a 10.4-in. active-matrix color screen. IBM PC Co. used a 10.4-in. screen on its high-end notebook to grab market share last year, and other competitors have followed suit. >

■ A new Pentium notebook, due in mid-year, with a built-in CD-ROM drive built by Inventec Electronics Co., a Taiwanese disk maker. This is Compaq's first agreement in several years to relabel another manufacturer's notebooks.

Frainic declined to comment on product specifics but said users could expect to see a 10.4-in. color screen on a Compaq notebook this quarter and that the Contura 410 would come to the U.S. market.

Part of Compaq's comeback may also involve an executive shake-up. "Compaq tried to recruit me and the recruiters were talking to me about moving some other people out," said a vice president-level marketing executive at a rival PC maker who requested anonymity.

Users contacted said their doors are not closed to Compaq as long as the company addresses its quality issues.

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Judge balks at plan to settle Microsoft suit

By Mitch Bergs
WASHINGTON

At a fristy and unusual court hearing late last Friday, a federal judge repeatedly suggested the government's proposed antitrust settlement with Microsoft Corp. should be broadened to cover other complaints raised by competitors.

"While we're cleaning up this [blessing] mess, it would seem to make sense to clean up these other issues," said U.S. District Court Judge Stanley Sporkin. Just before the hearing, the judge ordered the parties to consider his own list of possible remedies, such as barring Microsoft from engaging in "vaporous" announcements that mislead competitors about new products.

Other remedies Sporkin suggested include establishing a

"wall" between Microsoft's operating systems staff and application development staffs and requiring disclosure of operating system instructions that give Microsoft a competitive advantage.

But Anne K. Blingsman, head of the U.S. Department of Justice's Antitrust Division, firmly objected to the judge's second guessing her discretion. She said the judge should quickly sign the accord. Sporkin responded sarcastically, "Can I sign with my own pen, or does the government supply that? I've got have some role. It makes a mockery of the system if I have no role."

Blingsman said she opposes adding new elements to the settlement. "I don't mind using Microsoft, but I can't see Microsoft for someone else on charge that, in my heart, I can't support at this time," she said.

Kmart picks new CIO Virginia Rago moves up from VP job

By Julie King

Two months after dispatching former Chief Information Officer David M. Carlson to the corporate netherworld of special projects, Kmart Corp. last week appointed his replacement.

The company named Virginia A. Rago as its new CIO in the midst of a long-awaited executive shake-up at the nation's second-largest retailer.

Analysts said the appointment of a woman to the top technology post suggests the struggling company's willingness to alter its conservative operating style.

"Retail systems has historically been a man's world, but Kmart has hired someone based on their superior qualifications rather than their sex," said Tom Friedman, editor of "Retail Systems Alert," an industry newsletter in Newton, Mass. "It signals they're willing to change."

Rago's appointment comes less than six months after she joined Kmart as vice president of store systems development. She was recruited to the post by Carlson, the same person she will replace in her new job. Carlson was removed from the CIO post in November and remains a man without a title at Kmart.

Last week, however, Carlson applauded Rago's appointment. "I'm very proud of her accomplishments to date, and [I] know

she can do an extraordinary job at Kmart," Carlson said. "She has an excellent background in systems and logistics."

Whether Rago will proceed with a previously announced overhaul of Kmart's 3-year-old, store-based information systems remains unknown. Plans for the store systems revamp were disclosed in September as industry criticism of Kmart's inventory-handling capabilities was on the rise. Analysts had blamed miscalculated inventory levels for keeping sales down during most of last year.

Hold the line

Last week, Rago was not available for comment, but according to one company source, cost-cutting will most likely put the systems revamp on hold as well as keep overall 1995 IS spending to current levels. Kmart's 1994 IS budget totaled \$204 million — up 17% from 1993 IS spending.

Last December, in the midst of its eighth-straight money-losing quarter, Kmart ditched plans to cut overall costs by \$400 million to \$600 million this year, followed by another \$200 million in 1996.

Kmart also ousted Joseph E. Antonini as chairman last week. Analysts expect Antonini will be removed from his other posts as president and chief executive officer.

News Shorts

IBM shuffles execs in PC manufacturing group

In an internal shuffle that analysts say should shore up IBM PC Co.'s problem-plagued manufacturing operations, IBM last week named Joseph Formichelli head of manufacturing operations, reporting directly to Richard Thomas. Formichelli replaces John McClelland, who left to join a competitor that IBM would not name. Formichelli was formerly in charge of the mobile computing unit.

Intel goes into Overdrive

Intel Corp. today will announce its long-awaited Pentium Overdrive processor. Based on 3.3V, 0.6-micron technology, the processor can be used to upgrade most 50-MHz Intel SX2, DX2 and 25-MHz i486-based systems. The processor will operate at 66 MHz — roughly two times the performance of existing 486 processors.

Acer readies LAN servers

After a strong showing in the PC market last year, Acer America Corp. is making a bid to increase its presence in the highly competitive LAN server marketplace. Last week, the company announced two network servers based on Intel Corp.'s 90-MHz Pentium processor, with an entry-level price of \$3,118. The company also will add two new network and server management software, incorporating a point-and-click user interface to manage system activity.

Microsoft announces record sales

Last week, Microsoft Corp. announced record sales for its second fiscal quarter. Sales jumped 31% over the same quarter last year, reflecting a strong Christmas showing for its home products as well as good performance by the Bookshelf server suite and Office productivity applications suite, the company said. Profit for the quarter was up 29% from the same period last year, rising to \$573 million.

ATM to run over copper wire

Santa Clara, Calif.-based UB Networks, Inc. and Tui Systems, Inc., in Pleasant Hill, Calif., announced they will team up to deliver 155-Mbit/s

Asynchronous Transfer Mode (ATM) to the desktop over standard Category 3 copper wire. Currently, ATM runs only over more expensive — and less common — Category 5 and fiber cable. UB Networks will incorporate Tui transceiver chips into its Geoflink workgroup ATM switch and adapter line, which will ship in March, UB Networks said.

Apple: Profits up, and 1 million Power Macs out the door

Apple Computer, Inc. last week reported that sales for its first fiscal 1995 quarter, ended Dec. 30, 1994, jumped 15% from the same period one year ago, to \$2.83 billion. Profits surged to \$158 million, up from \$40 million a year ago. Apple attributed much of the increase to Power Macintosh sales and said it met its goal of shipping 1 million Power Macintoshes two months ahead of schedule.

Micro Focus launches 32-bit Object Cobol compiler

As promised at its annual user conference last May, Micro Focus, Inc. has announced a

new version of its Object Cobol compiler that uses a 32-bit engine and is available for OS/2 and Microsoft's Windows NT. The compiler is intended to give added programming options to object-oriented programmers and techniques and allows Object Cobol applications to be tightly integrated with other Object Linking and Embedding 2.0 applications, according to company representatives. Palo Alto, Calif.-based Micro Focus says it will ship the Object Cobol 3.2 this quarter.

Asymetrix to sell off products

Asymetrix Corp. announced a major restructuring last week, saying it will lay off 88 employees and sell off several products in order to focus on its core business. The Bellvue, Wash., company, which is controlled by Microsoft co-founder Paul Allen, will sell off or discontinue development of its screen savers and the Compel multimedia presentation product, said Vern Raburn, acting president of Asymetrix. The company, which will retain about 160 employees, will continue to develop and market its Toolkit and InfoPadode products, Raburn said.

SHORT TAKE 3Com Corp. in Santa Clara, Calif., acquired Integrated Services Digital Network development partner AccessWorks Communications, a Honolulu, N.J., company that makes products that provide high-speed access to the Internet. ... Nestor, Inc. in Providence, R.I., will announce this week at Lotusphere that its iNotes software for inbound fax routing will be available on Notes. ... Lotus Development Corp. and Motorola, Inc. will announce today at Lotusphere that the two will work to bring wireless support to Notes and CC-Mail. ... IBM finally got its wish last week, as the U.S. Court of Appeals for the Second Circuit removed Judge David Edelstein from the IBM antitrust case. IBM has been engaged in a lengthy feud with the 84-year-old judge, who has been overseeing IBM's effort to repeal the 1995 Consent Decree that restricts its outstanding practices. ... IBM PC Co. said it would release the AG adapters for 182 of its ThinkPad series of the possibility of electric shock. The recall affects ThinkPad Models 560CS, 75SC, 755CE and 755CD, mostly sold in Europe but also in U.S. models. U.S. customers can call (800) 256-1967 for more information.

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Users want SNMP support in Exchange

But Microsoft's server beta still lacks native support

By Suruchi Mahan

Electronic-mail administration will be a major focus in the beta release of Microsoft Corp.'s Exchange server expected to ship in early customer sites by the end of the quarter.

Also known as Test Release 3, this version of Exchange will try to make the E-mail administrator's job a little easier with features such as message tracking and the ability to limit the size of users' mailboxes on the server (see chart). What the new Exchange server will not

do, however, is natively support the Simple Network Management Protocol (SNMP). And that is a downside for users who are accustomed for vendors to extend SNMP support to their E-mail systems.

Microsoft supports SNMP directly in Exchange but only through Windows NT Server. Users must have NT Server to run Exchange, said Dileep Uves, a product

manager at the Redmond, Wash.-based vendor.

"SNMP-based management is important because it reduces the number of people needed to manage the network," said Mark Penwell, a senior systems analyst at Whirlpool Corp., in Benton Harbor, Mich. Additionally, he said, it reduces the amount of infrastructure needed to report monitoring.

Users also want the monitoring system to handle certain aspects of security such as tracking who is logged in, said Bill Aerts, an information security consultant at Burlington Northern Railroad Co. in St. Paul, Minn.

Features in Microsoft's Exchange mail server that should help with E-mail administration

- Limited size of messages users can send or receive
- Unlimited number of messages users can store in a database
- Public encryption
- Ability to check how many people are logged on to a database at a particular time
- Message tracking

Ultimately, customers need more than proprietary mail administration tools.

"I still have the same problems I had three years ago," said Mel Lively, a network manager at Presbyterian Health-care System in Dallas. "I see new products coming out, but nothing really goes all the way. There is no common management platform."

Not that E-mail vendors have been oblivious to the benefits SNMP-based management would afford users. Novell, Inc. in Provo, Utah, for example, supports SNMP in GroupWise 4.1.

The GroupWise product will detect an error and notify the administrator on a PC, but not on a management console used by a product such as Sun Microsystems, Inc.'s SunNet Manager.

"If we had a management console for every management application we run, we wouldn't have space for host computers in our computer room," Lively said.

Microsoft and Lotus Development Corp. also are taking halting steps in the direction of SNMP. Lotus will support SNMP when it ships its client/server version of CC-Mail View. The initial release of CC-Mail View for the file-sharing system will also support an SNMP proxy server.

But Tim Bissone, a consultant at Aberdeen Group in Boston, was unimpressed. Having SNMP integrated with Exchange is critical to firms trying to devise a management strategy. Exchange provides "slick" administrative tools to manage a Microsoft environment, but in a multi-vendor setting, users need an open management system such as SNMP, he said.

"Microsoft is keeping open a pathway into SNMP" while holding on to its proprietary management standards, said Ron Rassner, vice president of market research at Creative Networks, Inc. in Palo Alto, Calif.



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Drop that mouse! The boss is coming!

Government agencies and employers crack down on computer game playing at the office

By Mitch Betts

The office-wide Minesweeper competition — not to mention all those peaceful hours spent with Solitaire, Tetris or Flight Simulator — may become work diversions of the past as more employees purge computer games from the office.

The Virginia state government and the U.S. Department of Labor, for example, recently ordered employees to cease from their office PC's all games, including the Minesweeper and Solitaire apps included in Microsoft Corp.'s Windows 3.1x.

Game playing by state employees during business hours is inappropriate and "a clear example of misuse of taxpayer funds," said Cliff Schaeffer, a spokesman for Virginia's Secretary of Administration office in Richmond. "We wanted to nip it in the bud."

Just last week, a national poll showed the extent of the activity. The survey by Coleman & Associates, Inc. in Teaneck, N.J., found that 23% of PC game players said their most recent game action was at the office rather than at home.

Cover action

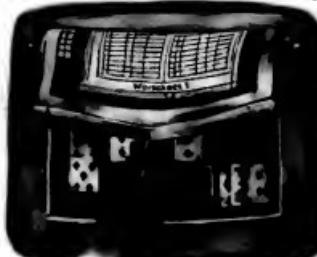
Emily Coleman, president of the market research firm, said her company's demographic breakdown showed that many of the office players are middle-aged middle managers. Another surprising tidbit, she added, was that women outnumbered men as office players.

As PC games have spread throughout the workplace — some equipped with "boss keys" that quickly switch the screen to a serious-looking spreadsheet — managers increasingly must face the issue of how to curb abuses without coming across like Big Brother.

Overall, Coleman said bosses ought to avoid micro-managing tension-relieving work breaks and focus only on whether the job gets done. "Managers who need that

much control should be managing robots on an assembly line, not knowledge workers," she asserted.

Indeed, Virginia's action generated numerous complaints from users, a spokesman acknowledged. Corporate technology consultant Tom Nolle, president of CMI Corp. in Voorhees, N.J., said he has counseled many companies to leave games on PCs and LANs and avoid user backlash.



Nolle said broad attacks on games are demeaning to users, so games should be removed only in individual cases where there is suspicion that they are hurting a worker's productivity.

Even removing games may not fix the problem, he added, because someone determined to slack off will just find other means, such as "hiding in the restroom reading a magazine for 30 minutes."

Government agencies are taking a hard line, however, perhaps to dispel taxpayer notions that civil servants are goofing off.

A recent memo issued by John G. Dineen, director of information resources management at the Labor Department in Washington, said office PCs "are to be used for official business purposes" with the possible exception of training courses where games are useful for teaching specific skills.

"Otherwise, the playing of computer games is simply not in the interest of government, and games should be removed from all computers," Dineen said.

No more playing around

Other organizations that reportedly have cracked down on PC games include Ford Motor Co., Sears Roebuck and Co., The Boeing Co. and Garber Travel Services, Inc. Boston-based Garber has deleted Solitaire, Minesweeper and Paintbrush from all 700 company PCs, said Rock Blanco, senior vice president of information technology.

"Actually, from an information systems point of view, I'm far more concerned about unauthorized software and viruses than about users playing games," Blanco said. The company feared it would lose clients if they discovered travel agents playing games, he said.

Games are not the only time-wasters on the job. A 1993 survey by SIFT Accounting Systems, Inc. in San Rafael, Calif., found PC users spend 5.1 hours a week "futzing" with their computers — which could be anything from changing the wallpaper on Windows to loading fancy fonts or clearing out the hard drive. Extrapolated over 25 million PC users, that could amount to 5 billion hours per year at a cost of \$100 billion, the study said.

Japan Internet sites report on disaster

By Ellis Boeker

Minutes after a devastating earthquake hit the Kobe and Kansai regions of Japan last week, Internet activists Kenji Rikitake in Osaka sent electronic mail to friends and associates worldwide.

"I don't think you can send food or water to Kobe just now, but you can help people in Kobe by sending support to Japan's Red Cross," Rikitake wrote in another E-mail sent 10 hours after the quake.

Rikitake's notes went straight to Tony Rutkowski, executive director of the Internet Society in Reston, Va., who in turn forwarded them to many other users. About 10% of the group's 4,500 members are in Japan, and the city of Kobe — the epicenter of last week's deadly quake — hosted the Internet Society's first INET conference in 1992, Rutkowski said.

Up-to-date reports

From radio and television news, computer users worldwide received a steady flow of reports about the earthquake via the Internet. By the end of last week, dozens of on-line informational sites were created in Japan.

A number of World-Wide Web sites in Japan are offering up-to-the-minute news and photographs of the disaster, which at last report had claimed more than 4,000 lives.

One of the very best collections of Internet-related resources about the quake is the Kansai Area Earthquake Information Resources on the Internet, a Web page maintained by Sony Corp. (<http://www.cs.sony.co.jp/earthquake/index.html>).

The internet became a vehicle to report information on the earthquake in Japan

Students at the Kobe City University of Foreign Studies have included more than 20 photographs of the devastated city in their Web page (<http://www.kobe-eufl.ac.jp>). In addition, the Japan What's New page (<http://www.ntt.jp/whatnew/index.html>) is offering links to a variety of postings that include lists of the deceased in Japanese.

Microsoft aims utility at NetWare customers

By Laura DiDio

Microsoft Corp. last week launched yet another salvo aimed at wooing Novell, Inc. users with the beta release of a software utility that allows a Windows NT Server 3.5 to emulate a NetWare 3.x server.

The File and Print Service for NetWare utility is designed to make it easier for NetWare 3.x users to migrate to Windows NT Server 3.5 without requiring changes to the client software, according to Mike Nash, Microsoft's Group Product Manager for Windows NT products.

Nabbing undecided users

Stated to ship this spring, Microsoft's utility is yet another example of how easy Microsoft is trying to make it for NetWare 3.x users, who may be undecided about migrating to the 4.1 platform or switching to NT Server 3.5, analysts said.

The File and Print Services for NetWare utility is a very straightforward way for users currently running NetWare 2.x and 3.x to increase their scalability and robustness without migrating to NetWare 4.1, said Michael Gouldie, a senior consultant at the Patricia Seybold Group in Boston. "And Novell should view it as a serious threat," he added.

Rick Villeneuve, an analyst at International Data Corp. in Framingham, Mass., disagreed. While the utility is another "check in Microsoft's laundry list, it will not be the can of worms that breaks Novell's back," he said.

Princing has not yet been set.

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Vendors race to offer Token Ring relief

By Stephen P. Klett Jr.

Traditional internetworking vendors are betting that it is better late than never when it comes to providing relief for bandwidth-starved Token Ring networks.

Last week, Bay Networks, Inc., 3Com Corp. and NetEdge Systems, Inc. each announced support or plans to support Token Ring switching across their respective product lines. However, except for NetEdge, users will have to wait as long as two years for certain products to ship.

"All the members of the billion-dollar club are jockeying themselves for position but mostly for long-term CIO mind share. The short-term emphasis is not on product," said John Morency, principal of Strategic Network Consulting, Inc. in Rockland, Mass., referring to 3Com's and Bay Networks' efforts.

This approach does not sit well with some Token Ring sites, which are uneasy over the dearth products for boosting bandwidth and migrating to Asynchronous Transfer Mode (ATM) [CW July 25, 1994].

"There is a definite need for more [Token Ring] speed, and we need help now," said Steven Toce, engineering consultant at The Travelex Co. in Hurford, Conn.

In March, NetEdge will ship Release 1.4 of its ATM Connect edge router software, which will provide switched access to a single Token Ring at a rate of 24,000 packet/sec.

3Com in Santa Clara, Calif., will roll out various Token Ring switching modules for its hub lines starting with LANplus/9000 in the first half of this year and ending with LinkBuilder Multi-Services Hub late next year.

Bay Networks, also in Santa Clara, will deliver an ATM core switching engine and ATM interfaces for its LatitudeSystem 5000 hub in the first quarter,

followed by Ethernet interfaces in the third quarter. Token Ring support, meanwhile, is slated for "sometime in '96," according to company officials.

In the meantime, the company will try to comfort users via a joint marketing and sales partnership with start-up Centillion Networks, Inc. in Mountain View, Calif. Bay Networks will resell Centillion's SpeedSwitch 100 Token Ring switching hub, and the two companies will conduct interoperability testing and integrate their respective management software.

Ethernet switches are currently offered by dozens of

Big lead

The Token Ring switching market is worth about \$50 million to \$40 million and the Ethernet market \$300 million to \$20 million, according to industry estimates.

ComNet clash expected

Developers brace for battle over videoconferencing standards

By Mary Brundell

All trade shows are loud. But ComNet '95 in Washington is likely to be especially boisterous as videoconferencing developers stage a standards shoot-out.

"By the end of ComNet, there will [either] be a civil war brewing or a consensus," said Richard Doherty, an analyst at the Envisioneering Group in Seaford, N.Y.

On one side is the Personal Conference Work Group (PCWG), which has 18 core members and 127 consulting members, including AT&T Corp., Novell, Inc. and Compaq Computer Corp. Intel Corp. is the de facto leader.

Last week the group introduced the first version of a specification intended to encourage interoperability among conferencing products on switched networks, LANs and standard telephone lines.

"Until this, there were no standards for LAN videoconferencing," said Bill Strauss, an analyst at Forward Concepts in Tempe, Ariz.

In the other camp are established ace-PC videoconferencing players such as PictureTel Corp. in Danvers, Mass. These vendors already use an international telecommunications standard, H.320, to talk to one another over switched networks.

The upshot for users: confusion and more reason not to invest heavily in videoconferencing systems.

The problem is that the PCWG specification and the H.320 standard do not interoperate, particularly because the former uses Intel's Indeo compression standard. The PCWG embarked on a separate spec because H.320 does not car-

ry over LANs or standard phone lines.

However, Elliot Gold, president of TeleSpan, a publishing group in Alameda, Calif., said those limitations are being addressed by the International Telecommunications Union, which developed H.320. Products that put H.320

systems. And AT&T is working on a transcoding capability in its Worldwide videoconferencing service. Intel is beta-testing a version of Proshare that is H.320-compliant.

That would help Frank Kavenick,

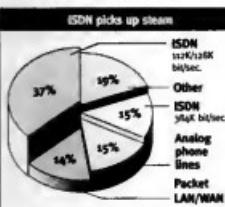
vice president of development at NetworksInSite in Chicago, who keeps

two systems on his desk for H.320 communications and one for talking to others on the LAN. Standards, he said, "may be a must point" if Intel comes out with H.320 software. "It may become a question of having a coexistence" between standards, he said.

The backing of many industry players and Intel's own marketing clout have many believing the H.320 will go far. It will likely "get the attention of everyone making hardware," Strauss said. "If you can do [PCIS] and H.320, and [PCIS] is cheaper, they just may pop for it."

But there is one market force that has not yet spoken: Microsoft Corp. "In their own way, [Microsoft] has said they support international standards," said David Boonstein, senior vice president of desktop programs at Applied Business Telecommunications, Inc. in Burlingame, Ala.

In the end, Kavenick said, "The winners will be the ones who can operate any standard over any communication link. Would it be nice if they were all the same? Sure. Is it a necessity? It may not be."



Source: Applied Business Telecommunications, Burlingame, Calif.

over phone lines will be introduced this spring, he said. The LAN standard is not so far along, he added.

"Intel is trying to replace an existing set of standards that have been adopted by a worldwide standards-setting body and by dozens of manufacturers and a large body of users," he said.

Another way

However, Intel's specification does encourage the development of dual-mode products that support the Personal Conference Specification (PCIS) and H.320. Compression Labs, Inc. in San Jose, Calif., said it plans to add PCIS compliance to its

vendors including Kalpana, Inc., 3Com and Grand Junction Networks, Inc. These vendors, Inc. are booming in popularity because they are more cost-effective than routers for segmenting large networks into smaller ones to meet bandwidth bursts. Switches also provide dedicated bandwidth to individual users or servers. Token Ring users who want these capabilities have few options.

Currently, only Standard Microsystems Corp. in Hauppauge, N.Y., and Centillion are shipping stand-alone Token Ring switches. Madge Networks, Inc. is expected to get into the game shortly.

No choice

"I give Bay a lot of credit for realizing they can't sit there and say, 'Token Ring switching in '95 or '97 and [the fact that they are] doing something about it with Centillion,'" said Rohin Layland, president of Layland Consulting in East Hartford, Conn.

Others were not as optimistic.

"This is a marriage of short-term convenience for Bay, so you have to wonder how much money they will throw at it," said Graham Morrison, a consultant at Scrooge & Marley in Beacon Falls, Conn. "If you're looking for a quick bandwidth fix, you can buy a product today, but if you want scalability and good management you should wait."

The bet that users will wait this long to upgrade their networks appears safe, if for no other reason than, for the time being, there is little else choice.

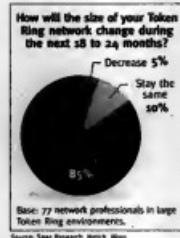
"Sure we're going to wait. How are you going to convince a CIO that he has to spend millions to replace Token Ring when it is a perfectly stable media?" asked David Pinkard, technical consultant at Mallinckrodt Medical, Inc. in St. Louis.

While the longwait is hard to take, Pinkard said it was a good start to see vendors making a commitment to Token Ring.

"It's high time the industry took a reality-test and figured out what people are trying to tell them. Legacy items are here to stay, and you have to deal with them and provide a reasonable upgrade path," Pinkard said.

According to analysts, vendors have been slow to develop next-generation Token Ring products because the market is smaller—the installed bases of Ethernet and Token Ring are roughly 30 million and 10 million, respectively—and inherently less conservative.

"Most vendors got caught up in the numbers game and figured why focus on Token Ring when there's so much more Ethernet out there, which from them for a year like a deer in the headlights," Layland said.



Source: Systech Research, North, Mass.

CompuServe asks users for GIF spec

By Julia King

Emboldened CompuServe, Inc. last week went to Plan B, inviting users to help the company develop GIF24 — a new, improved and free system for accessing on-line images.

In doing so, the on-line provider in Columbus, Ohio, is hoping to put an end to the uproar it set off New Year's Eve when it tried to charge software developers for using its very popular graphics interchange format, or GIF.

"What we are talking about is a successor to the existing GIF, which will be [a] 24-bit [format] and capable of more than 16 million colors," a CompuServe spokesman said. "The one thing we are absolutely clear on is that [the format] will be completely free and in the open domain," the spokesman said.

In other words, it won't contain the LZW data compression algorithm — a technology owned by Unisys Corp. and embedded in the current version of GIF.

Soliciting developers' ideas

Under pressure from Unisys to pay a royalty fee for its use of LZW, CompuServe last month announced it would charge developers a one-time registration fee of \$1 and no ongoing royalty fees of 1.5%, or 15 cents for every licensed copy of software that uses GIF (CW, Jan. 9).

But on hearing the news, developers went ballistic and bombarded Unisys and CompuServe with thousands of electronic messages. Their biggest gripe was paying for a technology that has been free for years.

In response to what it called "considerable discussion" in the past two weeks, CompuServe wants those same developers to help it create a new specification.

"What we're trying to do is involve the Internet community to come up with a cooperative effort," the CompuServe spokesman said. Many of the electronic messages the company received contained valuable suggestions for a new graphics format, he added.

On-line developers and analysts agree that the 9-year-old GIF specification, which is an 8-bit format that supports 256 colors, is in need of an upgrade. But it could take some time for wary developers to come to CompuServe's aid, according to Daniel Dern, a consultant and the author of *The Internet Guide for New Users*.

"There's a large resentment over the process by which this has all been done," Dern said. "From where I sit, this isn't so much about GIF but about a one-sided relationship with the on-line user community that suggests some vendors still think they own the world."

OS/2 users flirt

CONTINUED FROM PAGE 1

over looking down the pike, do I see something interesting? Probably not," said a senior analyst at another East Coast insurance firm. "Microsoft has done a better job at selling futures."

These OS/2 users are not alone. Interviews last week with other OS/2 shops indicated that IBM could lose loyalists if it does not present a clearer strategy and timetable for allowing OS/2 to run 32-bit applications written for Windows 95.

When Microsoft delivered Windows 3.1 in April 1993, it took IBM about a year to make OS/2 fully compatible. Users fear it will take IBM much longer to do the same with Windows 95, which is a much more ambitious project.

Decision time

For years, large OS/2 shops such as The Travelers have patiently run a split operating systems strategy. They have developed and deployed most, if not all, of their mission-critical applications under OS/2 and mixed them with popular off-the-shelf Windows-based applications.

With OS/2's ability to support 16-bit DOS and Windows applications alongside 16- and 32-bit OS/2 applications, many have been content not to change.

However, the promised barrage of 32-bit Windows-based server and desktop applications slated for this year and next has given some OS/2 accounts pause. This is particularly true for those seeking some long-overdue strategies to simplify their computing lives.

"Unless we drastically change our strategy, we are faced with managing development efforts for both platforms at the same time, which doesn't make sense. So [for the long term] we will change either our operating systems or development strategy," said Jeff Headley, a systems architect at First National Bank in Charlotte, N.C., which has deployed about 7,000 copies of OS/2.

This hesitation comes at a curious time. IBM announced just last week that it had sold more than 1 million copies of OS/2 Warp in just over two months. It also plans to deliver three or four key versions of the operating system by midyear.

"You don't develop mission-critical apps with the idea of running Windows productivity apps under them. What is coming home to roost is the failure of IBM's developer assistance program," said one senior consultant at a West Coast-based utility.

While some OS/2 users are clearly nervous about the long term, others appear to be rushing headlong into any serious projects under Windows. They are

under no illusions that working with Microsoft on mission-critical applications, especially under Windows NT, will be problematic.

"Microsoft still thinks like a desktop developer and has little experience working with enterprise apps in larger companies. They will have to go through a long educational process, which could cost us time," said Bill Worthington, a technical consultant at a Florida-based telecommunications company that uses both OS/2 and Windows.

With Microsoft's inevitable Windows freight train coming down the track, a nervous IBM has moved to respond to user complaints. Late last year, it formed a group to find "new and creative ways" to motivate software developers to write for all IBM operating systems, including OS/2, said Mark Goldstein, program director for IBM's Personal Software Products developer program.

Data-based One Up Corp. will soon launch a tool that promises to easily convert 32-bit applications for Windows NT and Windows 95 to OS/2 Warp. Goldstein said IBM has lined up several "major independent software vendors (ISVs) committed to converting their best-selling Windows applications to OS/2."

"I know everyone is tired of hearing 'watch this space,' but going forward over the next 60 to 120 days, you will see one major ISV commit [to OS/2 at the rate of] about one a month," Goldstein said.

OS/2 opens up

Late this year, IBM is scheduled to release a version of OS/2 that will tightly integrate various technologies from OpenDoc so that users will be able to transparently access other users' desktops across networks.

OpenDoc, an object-based component software environment backed by IBM, Apple Computer, Inc. and Novell, Inc., lets users combine components to create custom applications.

The announced version reportedly reimplements OS/2's Workplace Shell as an OpenDoc application, "turning icons into 'OpenDoc parts.' This allows users to embed various functions and applications as built-in parts of a customized desktop.

"In the short term, this means your desktop can be one big OpenDoc document. For the long-term, you will be able to access someone else's desktop like it was your own," said one developer briefed by the company. — *Ed Seemann*

BellSouth cuts Oracle loose from TV project

By Kim S. Nash

BellSouth Corp., the largest of the seven regional Bell operating companies, last week halted its negotiations with Oracle Corp. for a interactive interactive TV system planned for mid-1995, opting instead to sign a deal with rival Sybase, Inc.

A team from Atlanta-based BellSouth visited Sybase as far back as early November to explore alternatives to Oracle.

"We just couldn't come to terms," said Jim Gadd, president of BellSouth interactive media services. He declined to specify points of contention.

However, the fact that Oracle thought it would have trouble meeting BellSouth's fast-paced development and testing schedule contributed to the stalemate, a source at Oracle said.

The phone company aims to bring video-on-demand and other couch-potato applications to about 12,000 homes in northern Georgia by midyear.

Meanwhile, Sybase "had no trouble negotiating deals with BellSouth in terms of pricing or timing," said Bob Epstein, chief technologist at Sybase. "It's like Wild West right now in this market," he added gleefully.

Sybase is still part of the trial, provid-

ing its relational Oracle 7 database and other products for a billing and subscription management system on the back end of the consumer application.

No problem

An Oracle official denied that a dispute over the hardware platform contributed to BellSouth's decision to go with Sybase's interim database and related development tools.

BellSouth had selected Hewlett-Packard Co.'s video server hardware with set-top boxes from Scientific-Atlanta, Inc. Although Oracle announced plans last May

to port its Media Server database software to HP machines, the software is currently in production only on massively parallel processors from NCube, Inc. The product is in early alpha testing on HP and could be production-ready by spring, said Greg Hoberg, manager of broadband solutions at HP.

Oracle has not pressured BellSouth or other telecommunications partners to buy hardware from NCube, a company majority-owned by Oracle Chief Executive Officer Larry Ellison, said Bill Linder, vice president of Oracle's New Media group.

U.S. West and Bell Atlantic are using NCube machines in their interactive pilot.

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CiscoWorks 3.0 beefs up on-line help

By Stephen P. Klett Jr.

Help is on the way for users faced with the arduous task of troubleshooting large router-based internetworks.

Cisco Systems, Inc., announced it will ship in the second quarter Version 3.0 of its CiscoWorks router management soft-

ware, which will include on-line support services. The software will also come in a Windows version.

"Cisco has view management as kind of a necessary evil to help highly technical router managers," said Michael Howard, president of Infonetics Re-

search, Inc. in San Jose, Calif. "Now they are taking a bigger view and making stronger steps to more directly help network managers."

CiscoWorks 3.0 will feature CiscoConnect, which allows users to establish direct links via

Mosaic to Cisco's World-Wide Web server, giving them access to a service called Cisco Information On-Line. The service provides access to Cisco Technical Assistance centers, technical support databases and software updates, among other things. For users with Cisco maintenance contracts, there is no extra charge to access the Web server.

"The Web connection could be very useful and should help us solve problems quicker," said T. X. Ho, senior communications engineer at Chevron Corp. in Oakland, Calif.

San Jose, Calif.-based Cisco will also launch a scaled-down version of CiscoWorks in the second quarter for Windows-based PCs.

Analysts said the Windows support will fill a hole in Cisco's management offerings, as users without in-house Unix expertise and equipment are reluctant to bring in Unix workstations and invest in training just to manage their routers.

The Windows version of CiscoWorks 3.0 will cost \$2,495 — compared with \$9,995 for the Unix version — and will include three basic CiscoWorks applications: Configuration Builder, Health Monitor and Show Commands. CiscoWorks 3.0 will also include an application called CiscoView, which provides users with graphical views of physical devices to help them spot problems and quickly access the information they need to solve the problems, Cisco said.

"This is nice for demo purposes, but in terms of troubleshooting we don't rely on the graphical user interface," Ho said.

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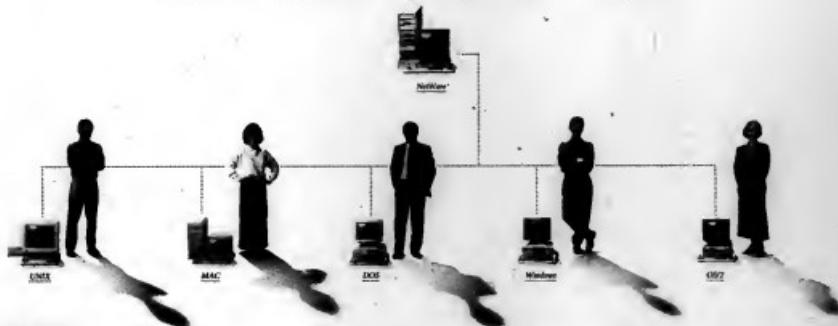
CiscoConnect and Cisco Information On-Line represent the first steps in Cisco's Network Aware program, which focuses on automating network management by giving up-to-date knowledge of users' networks to Cisco's technical support staff. For example, CiscoConnect takes information gathered by other CiscoWorks applications such as device configuration, statistics and bandwidth information and converts a customer profile file. The profile is registered with the on-line service to provide a quick reference for Cisco's technical staff. It is also used as a reference in automatically informing users of new features related to their network installations, Cisco said.

In conjunction with the CiscoWorks announcements, Cisco also launched a program called the Common Internetworking Topology Initiative, known as CITI, with the goal of developing a standard format for collecting and communicating configuration information for disparate network devices.

Cisco plans to make CITI documentation available to interested third parties. It will also submit a request for comment to the Internet Engineering Task Force early this year. Companies that have already agreed to participate include Avantech Corp., Cablenet Systems, Inc., Chipeon Corp., Optical Data Systems, Inc., SunSoft, Inc. and Remedy Corp.

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Wanted: Easy-to-use modeling tools for managers

By Mary Brandel

Amid the spreadsheets, word processors and, yes, even solitaire games on managers' desks, one type of software is missing: easy-to-use business process modeling tools.

This is especially problematic for the re-engineering crowd. "We had hun-

dreds of project managers, and we wanted a simple tool" for portraying and redesigning workflows, said Anita Ward, a vice president at Texas Commerce Bank NA in Houston.

Ward evaluated what she calls integrated re-engineering packages — those that combine project planning, workflow redesign and data modeling. However,

"the training curve ... was out of the question," she said. "They are often designed more for technically literate people than project managers."

"It will be a very different situation three years down the road," said Tom Koulouporos, president of Delphi Consulting Group Inc. in Boston. Large application vendors, such as Lotus Devel-

opment Corp., Microsoft Corp. and Novell Inc. are becoming aware of the importance of portraying and understanding business processes, he said.

Rumblings of this movement can be heard elsewhere. Process-modeling tools are being linked with workflow systems, which are designed with programmers in mind. The idea is to generate code directly from a business model designed by business users.

Meta Software Inc. in Cambridge, Mass., plans to introduce in February a bridge for its Workflow Analyzer process modeling/simulation tool with Xcel's i-Concert workflow software. Meta is also discussing ventures with other workflow providers, said Bob Seltzer, president of the company.

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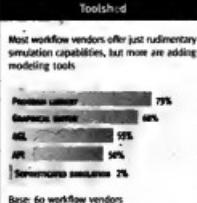


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There will also soon be workflow interfaces for Delphi's Workflow Factory, according to Nathaniel Palmer, an analyst at Delphi, which sells the Workflow Factory modeling tool.

Workflow providers — such as Recognition International, Inc. in Sunnyvale, Calif., and Viewstar Corp. and Action Technologies, Inc. both in Alameda, Calif. — are unshackling their process-modeling and simulation tools from their workflow systems so business analysts can use them on a PC.

No end in sight
But most of these tools still have a ways to go. Workflow vendors' modeling tools are vendor-specific, and most technical end users cannot use many of them, observers said.

On the traditional modeling side, "the tools tend to be wrapped up in business theory," said Bruce Silver, president of Bruce Silver Associates, a consulting firm in Weston, Mass.

Some said Meta's use of IDEF, a diagramming standard developed by the U.S. Air Force, bars it from the ease-of-use category. "IDEF comes from rigid methods that were used to model and simulate complex processes whose parameters were fairly well known" such as manufacturing, Koulouporos said. The parameters of business processes, he said, are not so clear.

In addition, Meta's per-seat price tag of \$1,000 or more "could limit its success," said David Yockelson, an analyst at Meta Group, Inc. in Westport, Conn.

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Late-arriving CDE may still benefit Unix

By Jean S. Brown

■ Whether or not users are ready for it, the a-year-old Common Desktop Environment (CDE) is coming.

Set to debut at UniForum '95 in Dallas in March, CDE is a common look-and-feel Unix desktop interface first conceived as Unix vendors' foil for Windows. Yet CDE will arrive far too late to make a dent in the Windows desktop market, users and analysts said.

Even so, CDE sponsors IBM, Hewlett-Packard Co., SunSoft, Inc. and Novell, Inc. are stepping up marketing plans, managers at those companies said. Rather than as a Windows rival, CDE is being positioned as an alluring target for independent software vendors' applications for technical and commercial workstations.

"The benefit is that there will be a consistent user interface across everyone's platform," said Buzz Walker, open systems marketing program manager at HP's Workstation Group in Fort Collins, Colo.

Divergent views

At Martin Marietta Corp., engineering workstation users plan to use CDE to create companywide user interfaces for computer-aided design packages. Calendar managers and desktop set-up tools, including Solaris, HP graphics and X11 interfaces, (GLX) differ widely, Martin Marietta users said.

"Some engineering users enjoy dealing with differences like that, it's like solving a puzzle," said Tom Smith, a senior systems engineer at Martin Marietta's Syracuse, N.Y., ocean radar facility. "Others feel that they shouldn't have to deal with that stuff because it gets in the way."

A set of PC-like calendar, electronic-mail and desktop apps will be wrapped in an overall GUI shared by all major Unix vendors. "If enough [independent software vendors] adapt it to their products and enough end users commit to it, it will serve a function," said Rich Riedeker at UniForum Association, Inc. in Santa Clara, Calif.

Approximately 2.5 million Unix desktop systems are in use worldwide, according to International Data Corp. in Framingham, Mass.

Dubious draw

Industry analysts said they were not surprised at the marketing push but added that it may miss the mark. "A marketing event will not work unless they go after the developers and show them there's a financial reason for them to put their precious time and energy into this," said Judith Hurwitz, president of Hurwitz Consulting Group in Watertown, Mass.

Some Unix users were nonplussed by the upcoming CDE announcement. "It's sort of a non-event for me," said Pompili Malin, information systems manager at Brewers Retail, Inc., a beer distributor in Mississauga, Ontario, The Sun Unix server shop uses Compucorp Corp.'s Unixafe development tools, which can deploy applications on Windows desktops and Unix servers.

Lack of cybershoppers

CONTINUED FROM PAGE 1

Six months later, the page is gone, and the toy maker is concentrating on more traditional marketing.

The page "got some response and sold some bears but not enough to warrant continuing at this time," said Andy Major, national marketing supervisor at Vermont Teddy Bear, Major, who was not responsible for the Internet page, said the site was independent of the company's inventory and billing systems and thus had to be manually updated.

When it comes to electronic commerce, the reality sinking in at many businesses is that the Internet, with 25 million to 30 million users worldwide, is a decentralized, often chaotic place. That makes it a challenge for sellers and buyers to find one another.

The traditional route

"We've been making two, three or four orders a day," said Chuck Haley, president and owner of Flower Stop Marketing Corp. in Colorado Springs.

Flower Stop began planning its Internet needs in October, adding its uniform resource locator address (<http://www.flowerstop.com/stop>) to as many Internet directories and malls as it could find. This pointer now appears in more than 50 locations.

Nevertheless, Haley said his company does far more business through specialized data networks, where it has positioned its services for years. "We probably get 20 to 30 orders a day from Commerce2," subscribers, he said, adding that he is banking on the Internet's emergence as a significant distribution channel for the future.

Many merchants said they are anxiously awaiting the impact of Windows 95, Microsoft Corp.'s next-generation operating system. Windows 95 will sport built-in support for Microsoft's on-line network, called The Microsoft Network, which will grant subscribers access to the Internet by year's end.

"We think Microsoft's entry will be a windfall that will generate a very large number of new users," said Kenneth Koppel, president of ContentWare, Inc. in New York. The company operates Shopping.com, a year-old cybermall that began hosting merchants last November.

Optimism over the potential of Internet commerce — and the fear of tarnishing this vision — may account for why high-profile companies are reluctant to quantify their sales volumes.

The Internet Shopping Network (ISN), one of the most visible mass merchants on the Internet, is "satisfied" with the number of people purchasing, said Bill Holloman, the network's vice president of marketing. However, he declined to disclose specific sales numbers.

ISN began its operation in April 1994 and was acquired five months later by Home Shopping Network, Inc. in Clearwater, Fla. It is now expanding beyond computer hardware, software and networking goods to consumer electronics and clothing. ISN hopes to have 500,000 items for sale by this time next year.

Another satisfied Internet marketer is Bill McKiernan, president of CyberSource Corp. in Menlo Park, Calif. The company's Web page, which has been open for less than two months, offers 7,500 shrink-wrapped software packages, a handful of which may be downloaded directly by the buyer. "Thus far, I've been frankly very encouraged by the buying. It's exceeded what we expected," McKiernan said. He also declined to provide specifics on sales figures.

More willing to quantify sales was Jeffrey Dearis, chief executive officer at The Electronic Newsstand in Washington, a 2-year-old magazine fulfillment service representing more than 200 publishers. "My guess is we've sold many, many thousands of subscriptions but not the hundreds of thousands that you'd get from direct mail and more traditional means," he said. Dearis added, however, that the company is lagging 60,000 hits per day on its server.

Interestingly, Dearis' and others said, they do not believe consumer reluctance to purchase goods on the Internet is due to security concerns such as a fear of transmitting unencrypted credit-card numbers across the open network.

Rather, the biggest obstacle may simply be sociological, a reflection of the peculiar demographics of the Internet as it stands today, they said.

"I wouldn't be too surprised if a big part of the story is [that] most of the people, say 90% of them, are young men. And young men do comparatively little shopping," said Jon Scott, president of Downtown Anywhere, Inc., a Boston-based virtual mall with 40 stores. Downtown Anywhere features a virtual city with museums, libraries, an artist's colony, a financial district and a post office.

Robinson emphasized the need for adding value to the shopper's on-line experience. Because the exit sign is a mere click away, merchants must find ways to keep consumers entertained and interested, he said. For example, ISN links its listing of for-sale software packages to InfoWorld magazine product reviews.

But others wondered whether the very concept of e-commerce is appropriate for cyberspace.

"It's not unlike describing TV as radio with pictures," said Charlie Holscher, president of New South Network Services, Inc. in Tallahassee, Fla. Shopping, he said, will be driven much more by context than location — even virtual locations such as a cybermall.

Still, a few merchants said that the single-minded pursuit of sales misses the point.

"We don't look at [the Internet] as a sales medium. We look at it as more of a marketing effort," said Rick Treiman, president and owner of Softpro, Inc. in Burlington, Mass. For two years, the company has provided an electronic version of its print catalog of 20,000 computer books. A year ago, it launched a Web site (<http://www.softproeast.com/softpro>) with an electronic version of its catalog and a searchable inventory database.

"We went to the 'net because we are a computer bookstore and service a very technical audience," Treiman said. "Our audience wanted us there."

Users and services must deal with on-line libert. See page 33.
Ametech delivers on-line publishing tool. See page 59.

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Computer Industry

Borland lays off 650 employees

By Neal Weinberg

Borland International, Inc. circled the wagons last week in a retrenchment that did little to allay concerns about the company's future.

Borland's previously anticipated restructuring will mean 650 layoffs, or a 40% reduction of its workforce, as the company exits the commercial software market and goes back to selling to software developers exclusively.

Speculation has been rife that Borland might sell dBase or Paradox, rumors which the company has denied. Borland also said it remains committed to Delphi 96, a visual development tool slated to ship later this quarter.

Michael P. Wallace, an analyst at US Securities, Inc., in New York, says the restructuring probably means Borland will sell its simplified consumer product line, although it did not indicate it will do so in last week's announcement.

"I think they realize they can't compete with Microsoft for shrink-wrapped, mass-market database accounts," Wallace said.

Wallace said he expects Borland this week to report a \$17 million loss for the quarter ended Dec. 30, 1994, and predicted another loss in the current quarter. Borland will report revenue of about \$70 million in the quarter just ended, and its focus on a smaller target audience will probably mean lower revenue in the future, he said.

"They had zero choice" but to restructure, said Jean W. Orr, an analyst at A.G. Edwards, Inc. in St. Louis, citing the disappointing sales of dBase for Windows. "Whether they can reposition themselves... remains to be seen."

Keeping their options open

Nicole Roth, an analyst at International Data Corp. in Mountain View, Calif., said, "I still think if somebody offered them money for dBase or Paradox they would probably accept it. If somebody offered them money for the company as a whole, they would accept it."

Bud Orr said sluggish sales might make dBase and Paradox difficult to sell, while a pending decision in a lawsuit filed by Lotus Development Corp. could scare off potential buyers of the entire company.

Roth says Delphi 96 is a "neat product," but she has grown skeptical of Borland's ability to execute. "They are counting on Delphi 96 to be the savior," she said, adding that "dBase for Windows, [now], was going to be the savior."

The restructuring includes outsourcing some manufacturing, marketing and support, limiting development to the core products and reducing foreign operations everywhere except in the U.K., Germany, France and Japan.

V. David Hawkins, former vice president of the dBase business unit, was promoted to vice president of marketing and support. Paul Gross, former vice president of the languages and client/server business unit, became vice president of research and development, a new position. And David McGaughan took over as vice president of international sales and operations.

Digital snaps losing streak

IBM, Sun, Computer Associates round out upbeat results at high end

By Neal Weinberg

Digital Equipment Corp. surprised analysts last week with a \$15.9 million second-quarter profit, but the jury is still out on whether the battered systems vendor has turned the corner.

Stock analysts predicted a loss of between 50 cents and 50 cents a share, Chief Executive Officer Robert Palmer delivered on his goal of returning the Maynard, Mass., company to profitability by year's end.

Digital snapped a streak of five losing quarters, and its revenue improved by 7% to \$5.47 billion. Profits were 7 cents per share.

Consistent cuts

Digital had continued its aggressive downsizing during the quarter, slashing 4,200 positions, or 11% of the workforce in the past 12 months, the company has cut \$1.05 billion in costs and laid off 5,000 more employees as it zeroes in on its target number of 60,000 workers, Palmer said.

Analysts were divided on whether the small profit, reached through a combination of cost-cutting and revenue growth, was a sign of meatier earnings down the road.

"It was clearly a step in the right direction," said analyst Shao Wang at Smith Barney Shearson, Inc. New York. But, he cautioned, "One quarter does not a trend make." Wang said he expects Digital to take a small loss in the current quarter, but it will rebound with a significant profit in the following quarter.

PCs, Alpha-based systems and networking products fueled the increase in revenue, according to Wang. Service revenue was flat, with a decline in traditional VAX hardware maintenance canceling out increases in systems integration and multivendor services.

On the downside, Wang said the VAX side of the business dropped 32%.

"The worst is probably behind us," says one executive, adding that Rooney, an analyst at Donaldson Lufkin & Jenrette Securities Corp. in New York, best be said most of the revenue growth came in low-margin areas such as PCs, peripherals and low-end Unix servers.

Palmer conceded last week that neither the PC business unit (one piece of Digital's turnaround strategy) nor the computer systems division were profitable. Rooney questioned Digital's long-term strategy of trying to become a dominant supplier of commodity products.

Things are rosier over at IBM, which is expected to report its fifth straight profit-quarter today. "From a financial standpoint, they have eliminated any gloom-and-doom-type worries," said Bob Djerdjevic, president of Annex Research in Phoenix.

Other companies fare well

Analysts last week were forecasting that IBM will report fourth-quarter profits of about \$1.1 billion on revenue in the \$20 billion range. That would compare with a \$382 million profit and \$19.4 billion in revenue a year ago. For 1994 as a whole, profits are expected to hit almost \$3 billion.

Mainframes appear to have exceeded expectations again in the fourth quarter, and the AS/400 midrange line and RS/6000 mainframe disk array also sold strongly, said Gary Helmig, an analyst at SoundView Financial Group,

Inc. in Stamford, Conn.

Much like Digital, PCs are IBM's "hope and its burden right now," he added. The PC Co.'s sales growth was likely held to single digits in the fourth quarter if IBM could be surprised if it was possible.

Meanwhile, Sun Microsystems, Inc.'s record-breaking second-quarter had analysts heaving. Revenue increased more than 20%, from \$1.15 billion to \$1.47 billion, while profits rose 80%, from \$41.8 million to \$81.6 million. The Mountain View, Calif., company shipped more than 81,000 units in the quarter, 54% more than last year. And revenue per employee exceeded \$40,000 for the first time.

Computer Associates International, Inc. continued to post impressive numbers for its third quarter ended Dec. 31, 1994. Revenue was \$721 million, up 26% from last year, and income grew 40% to \$174.2 million.

The Islands, N.Y. software giant was particularly encouraged by the 22% growth rate in its midrange revenue this quarter, thanks largely to the success of its CA-Unicenter systems management packages.

For last year's third quarter, midrange revenue contributed a mere 9% of total revenue. For the most recent period, midrange revenue reached \$157 million, representing 22% of total revenue, including more than \$85 billion in CA-Unicenter sales, according to Charles B. Wang, chairman and chief executive officer at CA.

Briefs

Asymetrix takes a fall

Asymetrix Corp., in Bellevue, Wash., last week reduced its workforce by 20% as part of a major restructuring effort. The company will also drop its access server software and presentation software lines, focusing instead on tools for developing multimedia applications and customizing databases.

Evans restructures

Evans & Sutherland Computer Corp. in Salt Lake City will cut about 200 jobs, or 20% of its worldwide workforce, in an effort to reduce costs and operating expenses by approximately \$15 million annually. A strong fourth quarter is expected for 1994 despite an anticipated one-time pre-tax charge of about \$1.5 million.

StrataCom on a roll

StrataCom, Inc., in San Jose, Calif., reported revenue of \$61.1 million for

its fourth fiscal quarter, a 30% increase compared with the same period last year. Total revenue for the year was \$154.2 million, a 107% increase compared with 1993.

Hayes turns a profit

A rebounding Hayes Microcomputer Products, Inc. in Norcross, Ga., reported net profits of approximately \$422,000 for first-quarter 1995. Net sales rose 19.9% to \$86.9 million from \$76.8 million for the same period last year.

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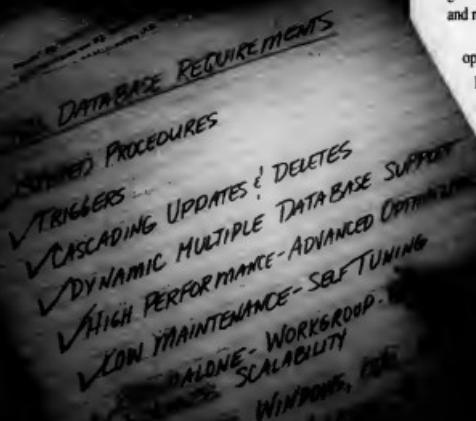
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Cleaning house?

Want to know why so many CIOs get fired or displaced? Most people probably assume it's because the technology deans just aren't up to the job. But consider this:

My wife was shopping at Kmart last Friday before Christmas. It wasn't a regular day; she had just paid the bills and was joined with her son, merchandise littered the floors, and the place looked generally disorganized.

She plied more than \$200 worth of merchandise into her cart and maneuvered it with great difficulty down the aisle to the back of the checkout lines, which were very long — so long, in fact, that she left the cart temporarily to answer a nature call.

The bathroom, she said, was disgusting. So she left the bathroom and the store, her \$200 worth of merchandise adding to the store's clutter instead of to Kmart's revenue line.

That same week, Kmart removed Dave Carlson, senior vice-president of IS, from his job. I was left with the feeling that Carlson was somehow responsible for the poor management at the store my wife visited as well as at many of the other 2,000-plus Kmarts.

But a few words about Carlson: He is simply one of the very best, period. The week before his ouster, *Computerworld* cited the outstanding work he'd done in intelligently migrating Kmart's legacy systems to client/server. Simultaneously, *CIO* magazine gave Kmart and Carlson one of its prestigious Esprit Awards, which recognize those who most effectively use information technology to forward their businesses.

Still, senior management at Kmart, reeling from its poorly hatched expansionist strategy, had to blame someone for its problems. Those problems couldn't possibly have resulted from management's failure to pay attention to basics such as caring for the needs of the shopper. No, it had to have been something else.

Why not finger IS?

Look at how much they've spent on technology, and our stores still aren't stocked with the same variety of goods as Wal-Mart! Millions spent, and we still have clutter in our stores. Shameful.

How often have CIOs such as Carlson been caught in the crossfire of the corporate blame game? While management has every right to expect IS to deliver bottom-line value on the investments made in information technology, both blocking and tackling — things like cross-functional and cross-department — remain the province of senior management.

Apparently, that reality finally dawned on Kmart's board of directors, who last week ousted its chairman and may well strip him of the president and CEO titles as well. While they're righting the Kmart ship, board members might also consider reinstating Carlson, although people of his caliber are no doubt in great demand elsewhere.

Beij Laberis

Bill Laberis, Editor in Chief
Internet: bilaberi@ew.com



Not so fast

I would urge that Congress not leap too quickly to correct the loophole that allowed David LaMacchia to be acquitted — the fact that he made no profit. Simply deleting the provisions in the current law that addresses only those who financially gain could create a law that allows "greedy" men to further restrict our freedom. As the old saying goes, haste makes waste.

Make the law serve anyone who helps others else gain financially. Add to the definition of "financial gain" the avoidance of paying a lawful and fair royalty. And don't forget to include acts of willful and intentional harm.

*Philip Howard
Dallas*

Leave politics out of piracy case

Your remarks in "A crime that pays" [CW, Dec. 26/Jan. 2], Joseph Maglitti writes, "Unlike mainframe jobs, client/server applications are meant to be changed.... Work crews will be permanently on site." How interesting. I have two questions:

What have the small armies of maintenance programmers been

doing for the past 30 years in mainframe application support?

As for the permanency of client/server support personnel, does

that mean — dare I say the words — that client/server applications

are becoming legacy systems?

er software has wrought. In fact, their antitrust bent has been downright hostile to enforcement of copyright and patent law.

You would do well to stick to purely industry-related topics and try to steer clear of areas where your opinions seem neither well informed nor well thought out.

*Joseph Sadowsky
New York*

Even though I too was angered by the David LaMacchia case, I feel you are morally deficient to politicize the disappointing judgment.

The real issues here have nothing to do with who appointed the prosecutor or with judge's tenure. The real issues are LaMacchia's lack of morals and the lack of reasonable laws regarding all aspects of computer crime. Next time, leave out the irrelevant political sticks and stones.

*B. Guy Cutcher
Pompton Lakes, N.J.*

Legacy looming?

In "Reconstruction" [CW, Dec. 26/Jan. 2], Joseph Maglitti writes, "Unlike mainframe jobs, client/server applications are meant to be changed.... Work crews will be permanently on site." How interesting. I have two questions:

What have the small armies of maintenance programmers been doing for the past 30 years in mainframe application support?

As for the permanency of client/

server support personnel, does

that mean — dare I say the words — that client/server applications

are becoming legacy systems?

*Joseph S. DeNatale
The Chipper Group, Inc.
Wellesley, Mass.*

Windows 95 is no match for OS/2

Virtually all the advances you find in your preview of Windows 95 [CW, Dec. 9, 1994] are available today in OS/2.

Take this absurd statement: "Windows 95... finally unshackles [information systems] from the 640K limitation." I beg to differ — I have been free of the 640K limitation since I began using OS/2 in April 1992. Moreover, Windows applications are better supported now under OS/2 than they will be under Windows 95. OS/2 allows individual Windows applications to run in separate virtual machines and memory addresses; Windows 95 will run all Windows applications in a single virtual machine, thus exposing them all to subjects like the same demons that plague them under Windows 95.

Windows 95 may be superior to Windows 3.x, but it will continue to be technically inferior to OS/2.

*Stan Rubinick
Athens, N.Y.*



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Stop building software by trial and disaster

Laurence J. Best

If they built buildings the way they build software, the first woodpecker to come along would destroy civilization.

This quip has made the rounds in both the software development and construction industries. Those who build information systems are not held in nearly as high regard as those who build buildings.

That isn't because buildings are more expensive, complicated or important to the enterprise than information systems. They aren't. The real reason for this lack of respect is that large systems projects fail so often. In contrast, failure of large building projects, to the extent that the building must be abandoned, is virtually unknown.

What do architects know that software developers do not? Part of the answer lies in the historical precedent. There was a time when building projects did fail. At one point in history, the maximum allowed height for cathedral spires was based on an understanding of materials and forces but on the height of cathedrals that had collapsed. Architects learned their craft the hard way — by trial and disaster. They have codified success in design practice into a body of knowledge transmitted to each aspiring architect.

What passes for "architecture" in software development today bears little resemblance to "codified successful design practice." It's really just handcrafting on the enterprise scale.

Consider the level of invention required to create an enterprise application software architecture vs. that required to design the building that houses the enterprise. The building design probably does not encompass a single component that deviates from standard design practice. On the other hand, most of the applications of the enterprise software architecture are products of individual invention based on personal experience and from-scratch analysis rather than "codified successful design practice." In other words, we haven't yet reached the point where we even record how high the old cathedral was before it collapsed.

Most software developers relearn the lessons it took architects a millennium to understand. There are signs that the software development industry is beginning to comprehend the real meaning of architecture: that robust, successful software applications have recurring features, structures and patterns

that do not need to be reinvented with each new system. These recurring patterns can be leveraged with reusable software components.

Leaders in software development technology are starting to employ new products based on the patterns concept. These new products include design handbooks, tools that encapsulate design abstractions and software components that are sufficiently general to be reused in a wide variety of applications.

Each of these products has a direct analogy in classical architecture. They provide an opportunity to accomplish in less than a decade what it took architects centuries to achieve.

It took architects centuries to achieve — a level of professional maturity that routinely delivers success even for enterprise-scale projects.

Best is director of the application architecture laboratory at American Management Systems' Center for Advanced Technologies in Fairfax, Va.

On-line libel: A \$200 million bug

Robert B. Charles

Information service providers are good at working out bugs. But what if the bug is a \$200 million lawsuit? Now that is a bug that makes a virulent virus look attractive. Welcome to the withering world of "on-line libel." Just how this particular bug will work itself out — whether in the industry or the courts — will affect us all.

As the Internet and commercial computer or bulletin boards grow in popularity and function and offer new means to transmit business — from the World-Wide Web to the Internet Shopping Network — the long shadow of liability is growing with them. An especially dark spot: on-line libel.

In November, this was driven home when Stratton-Oakmoot, a New York investment firm, and its president, Daniel Porush, filed a \$200 million lawsuit against Prodigy Services, Inc. The suit states that a user signed on and defamed Stratton-Oakmoot and its president. The suit cites a collection of postings, 88 lines in all, asserting facts about an initial public offering. The assertions, emanating from an unknown user, included statements that Strat-

ton-Oakmoot had acted fraudulently and criminally on the offering.

The company and Porush have sworn that they acted properly. Meanwhile, the financing they had, not surprisingly, left no footprints.

Why the hubbub? Well, this is the fourth major suit of its kind in recent years. And it is the first to delve deeply into the process of collecting documents and taking depositions. What's more, it is the first — perhaps not the last — to state a claim of such eye-popping magnitude.

At issue, of course, are fundamental rights and responsibilities: Should a commercial bulletin board be responsible for republication of allegedly libelous statements on the new medium? Does the First Amendment protect all aspects of on-line speech? What if a bulletin board assumes duties, as Prodigy has, of limited prescreening and periodic review of its bulletin boards, thus seeming to exercise editorial control? And, if there is little on-line libel precedent, what law will apply?

In the legal precedent in the on-line libel field (because other cases were settled before

In the withering world of "on-line libel," there are dangers both in not editing and in offering editing.

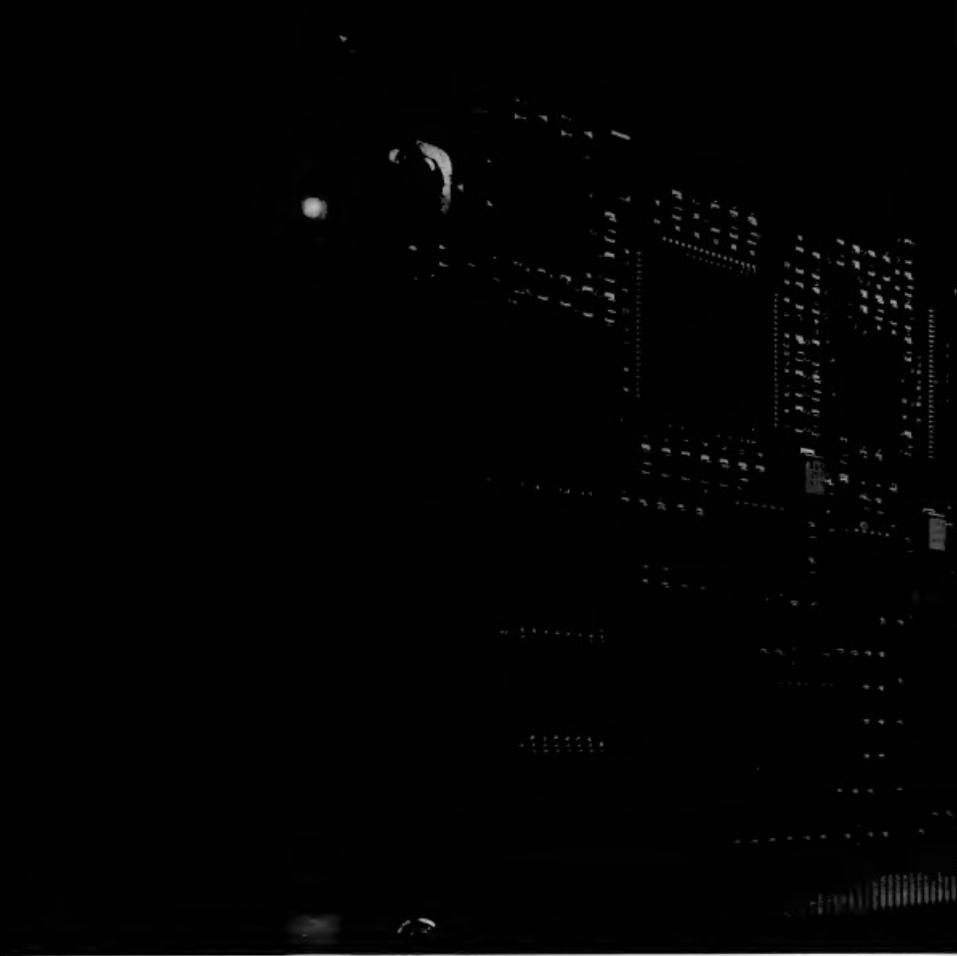


hearing a court decision), the court absolved CompuServe, Inc., of liability. The court found that CompuServe, which made no assertion of editorial discretion, was similar to a public library or bookstore.

However, complicating matters for Prodigy is the company's employment of a board editor and its pledge to prevent or remove certain messages. This raises prickly questions about Prodigy's differing editorial policies. But in the commercial bulletin board's corner, truth, if provable, is an absolute defense against a libel suit. Even so, there are now questions miring that all of us should care about. Chiefly, they concern the philosophy, policies and practices of new bulletin board technologies. How does one protect against libel claims? Beyond the commercial bulletin boards and editors, how can one protect subscribers? Should there be less editing to reduce liability? And how can the industry, broadly defined, protect third parties from libel?

Computer libel is a real threat, not just to those who revere unrestricted First Amendment rights and those vulnerable to libel, but to those who may end up liable. This is one bug worth working out sooner rather than later. If the industry doesn't, the courts will. And that could lead anywhere.

Charles is an attorney at the firm of Weil, Gotshal & Manges in Washington.



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Power Mac users warned

Threat of viruses increases if users run both Macintosh and PC applications

By Gary H. Anthes

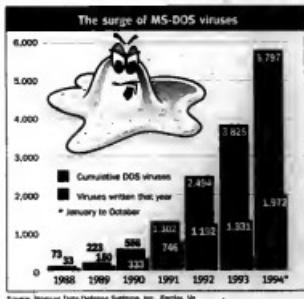
Users of computers running two operating systems may double their pleasure, but they also increase the risk of getting infected with computer viruses.

Even worse, users of new processors such as the PowerPC from Apple Computer, Inc./IBM/Motorola, Inc., may face added risk as otherwise benevolent viruses deliver unintended but deadly payloads when they encounter conditions not foreseen by the virus writer.

The U.S. Department of Energy's Computer Incident Advisory Capability (CIAC) recently warned users of Apple's Power Macintosh — which is based on the PowerPC chip running Apple's System 7 and DOS/Windows — to employ two virus scanners. "Currently CIAC knows of one single product that scans both the Macintosh and DOS sides of a Macintosh," it said in a note sent over the Internet.

Users take note

The CIAC note referred specifically to Power Macintoshes running SoftCard or SoftWindows emulation software from Insignia Solutions, Inc. in Mountain View, Calif. However, the same principle applies to



Power Macintoshes running in native mode or with other emulation products, said Bill O'Rourke, engineer at the CIAC.

David Stang, president of Norman Data Defense Systems, Inc. in Fairless, Pa., said PowerPC users running both Macintosh and PC applications should employ two virus detectors. "These are the kinds of users likely to get into software trades with their buddies," he said. "They are at the highest risk."

The good news is that some existing viruses, which are CPU-dependent as well as operating system-dependent, will not run on the PowerPC, Stang said. The bad news is some otherwise harmless viruses may prove deadly on the PowerPC.

"The majority of virus families have not been because the virus was programmed to blow your nose off at 2 AM in the morning but because the virus was trying to run on a machine the author never dreamed of," Stang said. "As the PowerPC [matures], we'll see viruses running better and with less calamity."

Too soon to tell

But Stang cautions, "There are no experts on the subject. There are PowerPC experts, but they don't know about viruses. And there are virus experts, but they don't know about the PowerPC."

Indeed, it may be too early to assess the specific threats. If any, that PowerPC users face. "haven't seen any viruses yet targeted specifically for the PowerPC," said John West, a virus specialist at the National Computer Security Association in Carlisle, Pa.

Smart scanners

Norman Data Defense Systems sells a PC virus scanner, but the company's president, David Stang, is not fond of scanners. "Either users scan too early and find nothing, or they scan too late and find several instances," he said. Also, scanners rarely contain the logic needed to find the newest viruses, he said.

Instead, the company tests a "smart behavior blocker" in its Antivirus product, which uses artificial intelligence to prevent — not just detect — virus infection. Instead of looking for the unique digital fingerprints left by known viruses, the program scans suspicious behavior as it occurs, taking corrective action as it notifies users.

"It's that moment when a virus is behaving that you especially want to stop it," Stang said. "You can catch 7,500 viruses by watching only a dozen or so behaviors or behavior combinations."

— Gary H. Anthes

PDA makers

CONTINUED FROM PAGE 37

Identify said it will buy 50,000 units "sometime."

"I'm not holding my breath, but [this customer] realizes how it'll change the way they do business once they modify how they internally use data," Klemert said.

Klemert added that Motorola is in the PDA market to stay and that eventually PDAs will challenge lower-end organizers such as Sharp Corp.'s Wizard.

HP moves forward

One maker of a low-end organizer might agree. HP, which makes the relatively successful 200LX handheld device, is moving forward in its plan to produce a handheld pen-based organizer based on Geoworks, Inc.'s Geos operating system, sources said.

HP is headed for a full announcement, likely in October, that could damage the Marca movement and HP's own handheld devices. The new product will weigh 7 ounces,

HP is moving forward in its plan to produce a handheld pen-based organizer based on Geoworks, Inc.'s Geos operating system

use Palm Computing, Inc.'s Graffiti handwriting recognition language, and features of the 200LX customized for Geos and a Type II PCMCIA slot, sources said. The product is expected to cost \$399.

Future plans

Sources also said HP plans to deliver a wireless version of its new product this year. It will be 11mm deeper to accommodate an Ericsson GE wireless modem that fits in the wider Type II slot and the extra battery power it will need to be a self-contained unit, the sources said. This product is expected in cost approximately \$600.

The sources said HP's plan is to target its handheld organizers at vertical markets but with a twist. The company also plans to make them customizable for a wide variety of vertical markets, HP decided to comment.

"If [HP] can do the wireless product right, they can make the [PDA] market jump," said one industry observer who asked not to be named. The observer said the first HP PDA probably will not boost the market much.

VESA promises PC/TV bridge on info highway

CONTINUED FROM PAGE 57

operability will be a big issue. They will have to interconnect like components of a stereo system, said Jack Roberts, director and principal analyst for graphics and display at Datquest, Inc. in San Jose, Calif.

If so the set-top is a board in the PC and a box on the TV, the two devices will have to perform common functions. The PC will have to be involved with interactive entertainment, and the TV must be involved with information services, he said.

The VESA is trying to create some of this overlap. The association has been trying to create meaningful standards for digital video. The VOST committee is trying to create an open set of standards for set-top boxes. The committee defines the set-top as everything from the service provider interface inward.

"How do you communicate the connection of the network interface module — the piece of hardware that takes the information encoded by the service provider and communicates it into digital form — with the rest of the set-top?" Schwartz asked. He added that in the long term there will be an industrywide desire for boxes to be compatible.

Looking ahead

By the year 2000, Schwartz predicted, the market will see quite a collection of devices hooked to the service provider, be it cable or telecommunications.

Overall, the concept of the set-top box is more evolutionary than revolutionary, Roberts said. The revolution tends to be in the type — that the box will change lives. It is just a natural fit that PCs, entertainment and networking come together," he said.

Corel Technologies Corp. has announced CardScan 3.1, business-card scanning software.

According to the Brookline, Mass., company, CardScan 3.1 directly transfers card information into popular contact manager software and copies business card images directly into Windows applications.

A SmartZoom feature zooms to the corre-

sponding area of the card when the user tabs in a field of the database.

The software scans any type of business card or Rolodex card and recognizes names, titles, company names, addresses, phone numbers, fax numbers and electronic-mail addresses and stores them in its own address book database.

CardScan 3.1 costs \$99 for software that works with most scanners or \$299 with a custom business-card scanner included.

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Desktop Computing

Sharp Electronics Corp. has announced Zaurus, a keyboard-enhanced personal digital assistant that combines a pen for note taking and a keyboard for text applications.

According to the Mahwah, N.J. company, Zaurus lets users send and receive electronic mail and faxes, access on-line services, exchange information with local and remote PCs, take notes on an electronic pad and generate documents.

The product includes 1M byte of memory, a PUMCIA Type II slot of memory expansion or communications and an optional mail system for small workgroups.

Zaurus weighs less than a pound and costs \$749.

► **Sharp Electronics**
(201) 539-0200

Pacific Rim Data Sciences has announced ColorBlaster, a device that attaches to color printers to allow them to print color PostScript files sent via modem.

According to the Fremont, Calif. company, ColorBlaster's software includes a bulletin board system that requests identification and billing information from the caller before the file is sent.

When connected to a SCSI drive, the

product can function as a file server system. Users send native or fax files and ColorBlaster processes or converts the files for printing while retaining the native files for transfer to the host computer.

ColorBlaster costs \$1,495.
► **Pacific Rim Data Sciences**
(510) 226-8930

DataStream Imaging Systems, Inc. has announced Print Tools-XT, a print utility for disk publishers that runs as a QuarkXpress XT extension.

According to the Lexington, Ky. company, Print Tools-XT specifies discontinuous pages, prints multiple plates, converts spot to process colors at printing, saves selected Quark items or areas as EPS files and provides switching between QuarkXpress' page setup and print dialogs.

Print Tools-XT costs \$39.
► **DataStream Imaging Systems**
(800) 255-6896

Optiquest, Inc. has announced Opti-Green Monitor and Energy Saving Software and Opti-Green Energy Saving Adapter, energy-saving software for monitors.

According to the Walnut, Calif. firm, Opti-Green Monitor and Energy Saving Software works with the Video Electronics Standards Association's Display

Power Management Signaling monitors by powering down the units when not in use. This saves up to 97% of power consumption.

The Opti-Green Energy Saving Adapter automatically turns off any type of PC-based monitor and printer when not in use and has adjustable settings for specified idle or shutdown time.

Opti-Green Monitor and Energy Saving Software costs \$29, and Opti-Green Energy Saving Adapter costs \$69.

► **Optiquest**
(909) 468-3750

Cyologic, Inc. has announced Voice User, a set of voice commands that runs on Microsoft Corp.'s Voice Pilot voice-recognition software.

According to the Seattle company, Voice User replaces the default commands of Voice Pilot with more than 200 intuitive voice commands that provide fast access to common PC functions.

Users can execute a function that takes three mouse clicks with one voice command. The product requires Microsoft's Sound System 2.0.

Voice User costs \$49.

► **Cyologic**
(206) 283-5890

Proportional Software Corp. has announced Swapper Plus, utility software for OS/2.

According to the Fort Collins, Colo. firm, Swapper Plus provides a virtual disk, RAM disk and a swap-file manager.

The product reduces the disk space required by the OS/2 swap file, speeds up swap-file performance and spreads the swap file over multiple physical and logical drives.

Swapper Plus costs \$24.
► **Proportional Software**
(303) 484-0666

MSR Development has announced PM 3.0, resource management software for OS/2.

According to the Naugatuck, Texas, company, PM Patrol 3.0 lets OS/2 users control RAM, hard disk space, print queues, logical network devices and swap-file size.

The product schedules tasks, monitors and displays operating parameters and continuously displays selected parameters on a status line and at the bottom of the screen.

PM Patrol 3.0 costs \$60.
► **MSR Development**
(409) 584-8822

Product short

Xerox Corp. has announced TextBridge 2.0, optical character recognition software for the Power Macintosh. Cost: \$99. Xerox, Stamford, Conn. (203) 966-3600.

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Workgroup Computing

SUPERPROJECT FOR SOLARIS FILLS
VOID IN UNIX ENVIRONMENT, 48
NEW PRODUCTS, 53

NotesSuite makes strong debut — with some minor flaws

By Jeffrey Gordon Angus

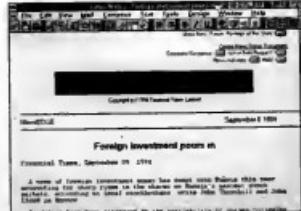
Lotus Development Corp.'s release of NotesSuite brings together its powerful, well-integrated Windows SmartSuite with a new version of its workgroup solution — Notes. The result is conceptually and technologically impressive.

The greatest comparative strength of Lotus offering is tight integration among very strong applications (1-3). Approach, Ami Pro, presentation tools, and an impressively fast-effort tactical hub called Smart Center that mostly works.

However, Notes as the strategic cement for larger workgroups is a brilliant, if not obvious, idea. The application suite supports individual users, bringing their work together in different kinds of applications. But with Notes, the work of many employees can be woven together to make sense of the complex workflows of modern organizations. Notes is a complex, network-resident server database that acts as a repository for workgroups' diverse efforts across Windows, Macintosh and OS/2.

Notes provides the following key advantages:

- Customizable templates for frequent tasks.
- Replication — the ability to create a local duplicate of a data file and later synchronize changes between the original and replicated copies.
- A flexible security scheme that allows quick implementation of a large range of different privilege levels.



Lotus' NotesSuite provides users with customizable templates for frequently repeated tasks.

■ The ability to easily execute high-performance text searches across multiple databases.

The newest version of Notes, Version 3.2, is news mostly because it contains 30 bug fixes for earlier versions.

Version 3.2 has more serious support for remote connections, supporting carrier-detected modem links. And the most noteworthy feature is a version of the package's Notes/FX 1.1, which makes good use of Microsoft Corp.'s Object Linking and Embedding functions. The utility works by filling application files for mutual access by people in workgroups, and Notes users can use SmartSuite applications to create and edit Notes documents.

NotesSuite, page 48

Lotus aims to push Notes at Lotusphere '95 conference

By William Brundell

The wisdom of the old software platform adage "to the victor goes the application support" is not lost on Lotus Development Corp. The company is using this week's Lotusphere '95 to bolster and display support for its Notes product line.

With its second holding of Lotusphere, Lotus appears to be building the necessary momentum for Notes to succeed as an application development platform in corporate settings. Company officials said they expect upward of 5,000 attendees at this year's conference in Orlando, Fla. In comparison, the last Lotusphere in November 1993 attracted 2,500 attendees.

The Cambridge, Mass.-based company will introduce not only new applications, but also application development tools and management products, said David Marshak, an analyst at Peat Marwick Yehold Group in Boston.

"There will be more tools and more mature tools for managing Notes servers throughout the enterprise," Marshak said. "This year, Lotusphere definitely goes beyond being just another Notes user."

The most significant tool expected to be announced at Lotusphere is NotesView, which Lotus developed with Hewlett-Packard Co. Based on HP's OpenView, the product is a Simple Network Management Protocol-based network management tool that lets a user administer Notes servers across the company.

Get into the net

Marshak said Windows-based tools from Sybase, Inc., Powersoft Corp. and Gupta Corp. will be unveiled in connection with Lotusphere. A new version of Lotus' VPS, a relatively easy-to-use development tool for Notes, is also expected to be announced.

Lotus is expected to introduce 100 new business partnerships and applications at the conference, up

from 80 at the last conference. Among these will be a new technology alliance between Intel Corp. and PCMCIA card developer Telegiq Corp. in Hollis, N.H. Sun Microsystems, Inc. is also scheduled to announce the delivery of its new SPARCserver for Notes at Lotusphere.

The following is a sampling of some of the other new products that will be unveiled:

■ **Revelation Technologies, Inc.**, in Stamford, Conn., will introduce OpenInsight for Workgroups; Lotus Notes edition. Unlike many of the other development tools that were ports from SQL tools, OpenInsight was designed from the ground up for the Notes replication repository. Revelation Technologies will also unveil a report designer for Notes. Open Insight for Workgroups costs \$1,995 per developer and will be available in the first quarter.

■ **Interimation, Inc.**, in Bellevue, Wash., will launch a Notes-based tool to help administrators manage assets and comply with software licenses. The product allows the user to perform these tasks in the Notes environment. Pricing and shipping schedules are not yet available.

■ **Verity, Inc.**, in Mountain View, Calif., will unveil its Topic

Agents for Lotus' Notes. Information agents that can be stored anywhere in a Notes environment. When enabled through a Smart Agent on the Notes desktop, the agents allow an end user to quickly access information by performing a Notes query. Available in the second quarter, Verity Top Agents cost \$140 per end user. ■ **Trellis Software, Inc.**, in Princeton, N.J., will introduce two Notes-based groupware offerings. SalesManager is a sales automation tool that helps salespeople identify, contact and close sales prospects using the Notes environment. ServiceHelpdesk provides technicians with tools to automate tracking and report on an organization's internal support efforts. Available immediately, SalesManager and Corporate HelpDesk each cost \$4,395 per server.

jean S. Bozman

To migrate or not to migrate

Users of Digital computers face a tough decision: Many want to migrate to Digital's newest operating system platforms, OSF/1 Unix and Microsoft's Windows NT. That's because of an explosion in networking computers and desktop computers in which Unix

servers, Windows NT servers and Windows clients play starring roles.

But about 10 million users worldwide are already quite comfortable with the Maynard, Mass., firm's VMS/OpenVMS, an operating system platform that has proved to be reliable through 17 years of use. And users who still own mainframes and minicomputers have concerns about the stability and security of client/server systems powered by Unix and NT.

Yet, Digital said half of the users it surveyed at December's Digital Equipment Computer Users Society (DECUS) meeting reported they will have migrat-

Bozman, page 49

CA-SuperProject for Solaris fills void in Unix environment

By Thomas Hoffman

Early users of Computer Associates International, Inc.'s CA-SuperProject for Solaris say the project management software fills a void in the narrowly defined Unix marketplace.

Until recently, the Unix market for project management tools was limited to Cupertino, Calif.-based Digital Tools' AutoPlan II and Laguna Hills, Calif.-based XPM Project Inc.'s Project Project Management (XPM) software. But those packages are limited to 16-bit architectures and cannot easily share project management information across multiple platforms, according to users and analysts.

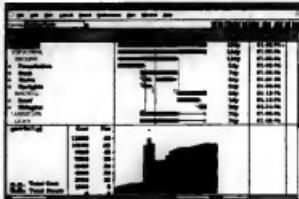
Enter CA-SuperProject for Solaris. The package, which the Isla Vista, N.Y.-based software company began shipping earlier this month, was designed to exploit the multitaskinging capabilities of Sun Microsystems, Inc.'s 32-bit architecture. "There's not a whole lot [of project management packages available] out there in Unix since nobody understands what's happening with the dual-processor market," said Paul Rohrer, chief executive officer at The Rohrer Group, a Mercer Island, Wash., project management consultancy.

Heavyweight contender

Rohrer, who is also the publisher of *Systems, Selections, and Uses*, a quarterly project management journal, said CA-SuperProject for Solaris offers robust resource management capabilities and touts several levels of expertise — for project management neophytes to experts. "The other packages on the market have been fairly lightweight. [This] is the best that's out there now," Rohrer said.

"CA-SuperProject for DOS and OS/2 have been strongly accepted among project management tools. One nice thing about the Solaris version is that ships with multiple platforms will be able to share project data since files can be shared across platforms," said Harvey Levine, principal at The Project Knowledge Group, a Saratoga Springs, N.Y., consultancy.

Users said they have been particularly impressed



Early users say CA-SuperProject for Solaris is well equipped to exploit Sun's 32-bit operating system

by CA-SuperProject for Solaris' ability to run in both PC and Unix environments. The product "fills a void in PC and Unix, but the major area it fills is void in its platform independence," said Bruce Frank, a course trainer at the Center for Professional Advancement, an East Brunswick, N.J., software consultancy.

CA-SuperProject for Solaris is also competitively priced at \$1,195 per user (with volume discounts available). XPM costs \$5,000 per copy; Digital Tools' AutoPlan II costs from \$1,495 to \$2,900.

NotesSuite

CONTINUED FROM PAGE 47

Notes/FX 1.1 advances the ability to embed other Lotus applications' files into Notes, so when you update in Notes or 1-2-3, the change is reflected in both documents. FX is also up to snuff in the way it updates embedded objects. In the prior version, you had to save and exit your application before it could be reflected in your Notes form.

This version includes new templates: a phone book, a reference document storehouse and a "team issues" database to track discussions and resolutions of evolving issues. This latter template implements something most workgroups need and fail to figure out how to do: It documents the evolution of their decisions on longer-term projects — not just what they decided, but why.

Some problems

All is not sweetness and light with this big complex suite. For one thing, we experienced occasional non-reproducible application errors that naked us not only to exit Notes but to restart Windows. Lotus' explanation was that it is pushing the envelope and that these errors are most frequently caused by either a lack of disk space or shrinking Windows resources.

The documentation is thorough but sometimes confusing or inaccurate. It tells you to run a Tour tutorial that is not well-marked in case of the installers; if you don't install everything in this elephantic set, you probably won't have it.

You will need 30M bytes of disk space to run NotesSuite when you start. If your users intend to store Notes databases on local hard drives instead of a server, then count on reserving another 30M bytes for that work. Lotus urges Notes sites to use servers to store these workshop files.

Politically, these servers only create friction. They do not obviate the power this suite can mean for workgroup interaction.

A Lotus NotesSuite Standard Edition has an estimated street price of \$695 for 100 users. An equivalent number of upgrades cost approximately \$495. Both are available in 11 languages.

Again is project director at The Data Works Ltd. in Seattle.

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Workgroup Computing

Bozman

CONTINUED FROM PAGE 47

ed to Alpha systems by June.

Digital managers say that users who jettison their aging VAXes—long the host platform for VMS—in favor of Digital's 64-bit Alpha hardware can have their cake and eat it, too. They can run OpenVMS on Alpha hardware instead of moving to Microsoft's Windows NT. But as with any migration from a proprietary system, Digital risks a steep erosion of its longtime user base as that base moves to Unix and NT.

User Issues

Digital executives who spoke at the DECUS meeting in Anaheim, Calif., got an earful of users' concerns about migration. And several officials, including Digital's Chief Technical Officer Bill Strecker, tried to set the firm's three-operating-system policy straight. In answer to a user's question at the keynote session, Strecker said Digital plans to support all three systems and have each one play in a different market.

"Which one of the three would you have us drop?" Strecker asked rhetorically. "I don't think there's any answer but to continue with the three. We see big opportunities with all three of those operating systems, and we'll continue to invest heavily in them to make sure they're [on] at the leading edge."

But user after user stepped to

the microphone and pointed out cases in which the catalog of OpenVMS applications is not keeping pace with those written for Unix and NT.

In the absence of a day-to-day dialogue with Digital's marketing execs, users and analysts are trying, most often unsuccessfully, to divine patterns in the third-party support for Digital systems. They are trying to decide if the pain of migrating to OSF/1 Unix or Windows NT is worthwhile. They wonder if hardware flaws await them on the other side.

The fundamental problem is one of marketplace economics because nearly all the independent software vendors are targeting a handful of "portable" systems for multiple hardware platforms, including Windows 3.x, Windows NT and Unix. But Strecker absolved Digital of having much responsibility in influencing independent software vendors. "We are not in the driver's seat as to what platforms our [software] partners put applications on," Strecker said. "We will encourage partners to put all applications on all of our platforms."

Fear has also reared its ugly head because many users worry that the choice they have already made—to stick with OpenVMS—is not the right one. "Please don't exclude VMS from new users and new marketplaces," one user pleaded. "Let it succeed."

In another DECUS session, Jesse Lipcon, OpenVMS marketing vice president, said Digital has to make up for oversights in publishing OpenVMS while the computer

firm reorganized. But other Digital managers say the Unix and NT alternatives on Alpha hardware have their advantages. They say the firm's 64-bit Unix is technically superior to other Unix offerings, and Digital's NT expertise is bolstered by its working partnership with Microsoft.

Paying the cost

Ironically, users moving into open systems are often concerned about uptime and security — two areas in which VMS/OpenVMS excels. There is a long history of VMS preventive maintenance, and longtime users also know the OpenVMS operating system silently logs system errors for analysis by software engineers. They want that kind of security blanket, but may choose OpenVMS's higher price tag and proprietary inflexibility.

Now that the doors that once enclosed Digital's proprietary VAX systems have been thrown open, users can rewrite their VMS or OpenVMS applications for Unix and NT. They can easily jump ship to other vendors' platforms. They can make a side-by-side comparisons with their vendor's products, and they can look more at price/performance than at the brand inside the software package. Digital says it can still win on its merits, but it has also decided that moving to open systems is a chance it must take.

Bosman is senior editor, open systems, in Computerworld's Burlingame, Calif., bureau.

Object-oriented applications

Canon announces NextStep system

By Tim Ouellette

Canon Computer Systems, Inc.'s Advanced Technologies Division in Hillsboro, Ore., has announced Object.station 31, a workstation optimized to run Next Computer, Inc.'s NextStep object-oriented application development software.

Object.station 31 is billed as an entry-level 486-based workstation that can also run Windows via Insignia Solutions, Inc.'s SoftPC Windows emulation software. A 90-day demonstration version of the emulation software comes bundled with the workstation. The workstation can be upgraded to Intel Corp.'s Pentium OverDrive CPU and comes with a 17-in. color monitor and a 500MB hard drive.

Since Next left the hardware business last year, the only home for NextStep has been on PCs, with the latest iteration running operating systems such as NextStep than an integrated workstation. "I like [Object.station 31's] architecture a lot after configuring my own PC for NextStep and knowing what it takes," said Angela Hey, an analyst at Insoft, a research firm in Mountain View, Calif. "Companies can maximize their investment in existing PC applications if down the road they decide they don't want NextStep."

Next niche

Canon, an original founding partner of Next, has incurred a high-performance video subsystem in the workstation that it claims runs NextStep and NextStep applications faster than other Intel-based systems. Hey said that while NextStep has state-of-the-art object technology, she does not think it will become a mass-market product. She said she sees Next maintaining a niche position among developers of applications that go through constant changes.

Dale Fuller, Canon's marketing director, said the \$3,999 price is aimed at companies that want to be able to deploy applications quickly at a reasonable cost, specifically firms in the financial, telecommunications and transportation industries.

when managing UNIX systems.

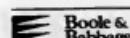


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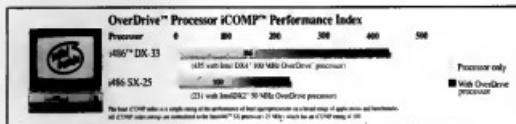


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Workgroup Computing

SysConnect, Inc. has announced Sk-Net Switch 8616, a client/server LAN switch.

According to the San Jose, Calif., company, Sk-Net Switch 8616 switches 16 independent Ethernet segments and supports multiple connections to high-speed LANs.

Any port can be connected to a single-user or shared Ethernet hub and can deliver 10M bit/sec. to each desktop or workgroup.

Sk-Net Switch 8616 costs \$9,495.

► **SysConnect**
(408) 437-3890

Percussion Software, Inc. has announced Notrix Composer, data integration software for Notes, that lets users access Sybase, Inc., IBM and Microsoft Corp. databases.

According to the Boston company, Notrix Composer provides bidirectional data integration between Notes and enterprise databases. Users can map fields, select records, calculate new fields and determine job frequency using the Notes form.

An Event Manager automates activities in Notes, while a Notrix Composer Form walks Notes users through the process of specifying servers, source databases and target Notes databases.

Notrix Composer runs on the Notes server and costs \$4,995.

► **Percussion Software**
(617) 267-6700

Digital Equipment Corp. has announced TeamLinks Office Server, the server component of Digital's TeamLinks Office suite of groupware applications.

According to the Maynard, Mass., company, TeamLinks Office Server includes server components for TeamLinks Mail, TeamLinks Routing, TeamLinks Conferencing, DEC-VXT electronic information library and Calendar Manager.

TeamLinks Office Server with MailWorks mail server costs \$22,300 and runs under OpenVMS on VAX platforms.

► **Digital**
(508) 641-3111

Novell, Inc. has announced SoftSolutions 4.0A for Windows, document management software.

According to the Provo, Utah, company, SoftSolutions 4.0A includes compati-

bility with the Open Document Management application programming interface connectivity standard and an integration manager that simplifies SoftSolutions' integration with other software.

The product provides file management and document search and retrieval capabilities.

SoftSolutions 4.0A costs \$495 per server and \$195 per additional workstation license.

► **Novell**
(800) 429-7000
Symantec Corp. has announced Time Line 6.1 for Windows, project management software.

According to the Cupertino, Calif., company, Time Line 6.1 includes a report writer and query tool and lets users set up cross-project dependencies and resource allocations to determine how projects affect one another.

Features include a linking browser, a

task locating dialog box, import and export of Microsoft Corp.'s Project 4.0 file formats and customization options.

The report writer can incorporate information from other corporate databases and generate electronic mail-enabled reports for distribution. Users can also choose between the standard toolbar or a floating-point tool palette on screen.

Time Line 6.1 is compliant with the Open Database Connectivity standard and costs \$500.



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Network management

Users want details on 'snap-in' apps

By Steve Moore

A Some vendors of third-party network management applications love to boast how their applications easily "snap in" — Lego block-style — to high-end network management platforms. But users who believe that process is as simple as it sounds are in for a rude awakening.

Indeed, skeptical users and analysts are pressuring network management vendors to explain exactly what level of integration they are actually providing. "If 'snap in' means just having an icon that drags down into the [product], probably every third-party software vendor out there could claim that capability," said Bob Janssens, a LAN network management analyst at Business Systems Group in Houston.

More and more
Users are demanding much more than that. Network management applications should share data with the high-end platforms such as IBM's NetView and Hewlett-Packard Co.'s OpenView, according to a network manager at a major U.S. oil company who requested anonymity. Integration also means "doing something intelligent" with the shared data, such as "building inference engines to help with troubleshooting so the user knows exactly what caused the problem and what to do about it," the network manager said.

The basics

Just what does it take to "snap in"? Carole Crall, director of network management at Cisco Systems, Inc. in San Jose, Calif., said users should look for the following key capabilities in integrated management applications:

- A common user interface that allows multiple applications to be controlled from a single window, not separate windows.
- Common event reporting, so alerts from all applications are sent to the same place in the same or a similar format.
- Common process integration, so tasks such as adding users and changing ports and security permissions are performed in a consistent manner across all applications.
- A common data repository that provides one

format for how all the related network management applications deposit information and how people can get information out.

Beyond these generic capabilities, there are important platform-specific integration requirements. For example, third-party applications need to adhere to IBM's systems management interface, Tivoli (SMIT) to work well with NetView/6000, said Guy Irizarry, Novell Inc. manager of American Cyanamid Co. in Clifton, N.J.

That is not always the case. When Irizarry tried to use Bay Networks, Inc.'s LatticeView software with NetView/6000, he found LatticeView to be "cumbersome to install and test and not as clean as we expected." For LatticeView to fit well with NetView, "they should have some code that could be driven using SMIT, and they don't," he said.

Help wanted

A positive step, the oil company user noted, would be for vendors of network modeling and simulation tools to integrate their products with high-end management platforms. In this way, modeling and simulation tools would pick up data from the platforms and applications, making network management systems easier to use and manage, he added.

Yet another integration issue, Janssens observed, is coordinating different vendors' alerts. Most users prefer that all management applications deliver alerts via an alphanumeric pager with messages in plain English, but they often must deal with cryptic, vendor-specific numeric alert codes that cannot be interpreted without going to a console.

"And when we start having hundreds of these alerts, who's going to coordinate one vendor's Alert 5 with someone else's?" he asked.

A final test of vendors' application integration is to talk to other users who have firsthand experience. Unfortunately, Irizarry said, vendors have become increasingly reluctant to provide customer references.

"In the past, I always knew because I called my buddy who was in beta, and he would tell me. Now, you always end up fending for yourself," he said.

NT Server elbows in on NetWare 4.x

But Novell product holds top spot in sales

By Laura Dickey

Bob Bowman is one user who had no trouble making a choice in the Great Windows NT Server vs. NetWare debate.

Bowman, chief information officer at Decesnus Hospital System Hospital in St. Louis, said he chose Microsoft Corp.'s NT Server 3.5 because it fulfilled several basic criteria: It was less expensive and easier to install and use, and it offered application services that were more tightly integrated with the desktop operating system than Novell's NetWare.

Bowman expressed a healthy respect for NetWare but said NT Server 3.5 was ultimately better equipped to be the vehicle to carry the hospital to a true client/server setup during the next five years.

One of many

Lee Doyle, an analyst at International Data Corp. (IDC) in Framingham, Mass., said Bowman's comments are typical of other information systems directors. And, he said, Bowman's decision provides insight as to why NT Server 3.5 has made some inroads into NetWare's overwhelming market share this year.

"I'm still not convinced that Microsoft can wrest away a big chunk of Novell's installed base, but there's no question they've got a lot of momentum going," Doyle said. "Many businesses are going with NT Server to try something new and different, and Microsoft is giving them lots of incentives. Overall, though, NetWare 3.x and 4.x still enjoy a high satisfaction rate."

Douglas estimated that Novell's current 60% market share will dip to between 60% and 64% as Microsoft lures customers to its Server 3.5 camp.

For years, the Decesnus hospital lagged technologically with an outdated mainframe-based network operating system. "Health care institutions and the federal government have a tendency to buy hardware and stick with it until it dies," Bowman said. Decesnus was a mainframe shop using a mainframe network operating system that was on the verge of not being supported because it was three versions out of date.

Past problems

The mainframe was ill-equipped to deal with the computing needs of 750 users (a number increasing to more than 1,000 users by midyear) dispersed throughout 30 sites in the St. Louis area, Bowman said. Few of the older information systems in the departments, physician practices and outpatient clinics were interconnected. And those that were linked were difficult to use, Bowman recalled.

"It was a mess. We had duplicate data tracking across many systems; users had multiple dumb terminals; very few PCs were connected to the NCR Corp. mainframe; and there were no standard desktop applications or electronic mail," he said.

To help fix this, Decesnus will deploy NT Server 3.5 to track information on inpatients and outpatients — including admissions, financials, patient management and scheduling treatments such as radiology. The network consists of 18 servers, including IBM SVA servers, Microsoft Mail servers and application servers running Microsoft's SQL Server.

Bowman said his staff of 50 network administrators, programmers, systems integrators and operations workers were especially NT Server, page 59



Decesnus' Bob Bowman: NT Server will save hundreds of thousands of dollars in development costs

No. 1 NetWare

By the end of the year,

NetWare 4.x shipments will make up 25% of new network operating systems shipments worldwide, while Windows NT Server 3.5 will account for 10%, according to IDC.

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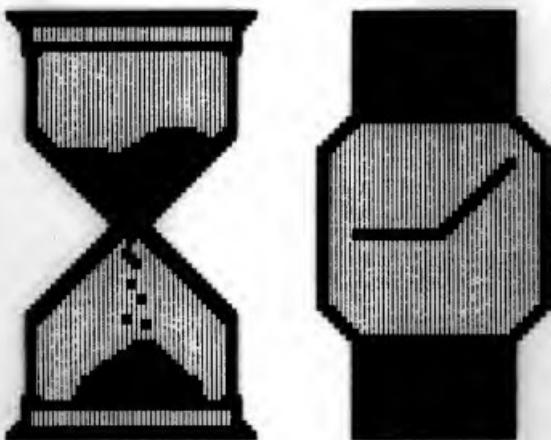
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NT Server, page 59

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但也有例外，如在新嘉坡、吉隆坡和雅加达等处，都有不少中国菜馆，而且生意兴隆。

Enterprise Networking

Ameritech unit delivers Internet publishing tool

By Ellis Bookler

■ Think library science is a musty skill? Think again.

As the information "published" on the Internet grows exponentially, companies that have quietly served the library market for years are fast becoming the unlikely heroes of cyberspace. It is these companies that know how to structure a large body of information and make it easily searchable, digestible and usable by a large number of people.

In mid-December, a small unit of Chicago-based Ameritech Corp. burst onto the scene with one of the first turn-key Internet publishing platforms for Internet publishing. NetPublisher, an authoring tool for companies that want to put information on the Internet, can output content in several forms: World-Wide Web, gopher and the Z39.50 text search protocol.

More than just libraries

NetPublisher from Ameritech Library Services in Evanston, Ill., is one of the first server platforms of its kind based on Microsoft Corp.'s Windows NT. Although most of the users of these tools have been libraries and on-line information services, companies can use authoring software to publish press releases and other kinds of corporate data on the Internet.

Beta customer Gregg Rosenberg, director of systems and technology at Applied Computer Services, Inc. in Orland Park, Ill., reported that the Ameritech system was a breeze to install and use. "It's probably the least complicated solution out there," Rosenberg said.

Applied Computer Services is sched-

uled this month to port its in-house Internet site to one that is publicly accessible using the NetPublisher platform.

Rosenberg, an expert in Internet security, also said he is very pleased that Ameritech Library Services decided to host its product on NT.

"One big argument in favor of going NT vs. UNIX is that the hacker community hasn't figured out how to crack the NT server yet," he said.

John Kolman, vice president of development at Ameritech Library Services, and the company's experts, the Z39.50 search committee, the basis of Wide Area Information Service servers — to satisfy its library customers who use large full-text indexes. But Kolman said he expects Z39 to become an important feature of commercial sites this year.

This advocacy for Z39.50 is understandable: Ameritech Library Services (formerly Notis Systems, Inc.) was the first vendor to develop a commercial version of Z39.50.

NetPublisher's interface includes templates for building information repositories. The templates, which work with the product's drag-and-drop Windows editor, prompt the user for header, footer and graphical content.

Along with the server platform and the editor, NetPublisher contains a monitor for creating management reports on server activity.

NetPublisher requires Windows NT 3.1 or higher, a 486 PC or higher, 24M bytes of RAM and 10M bytes of disk space. NetPublisher sells for \$8,000, and the Ameritech Library Services is offering a half-price deal for beta customers through the end of the month.

NT Server

CONTINUED FROM PAGE 57

excited about the universal security on NT Server and the fact that they are not "dependent" on the domain server for security.

Sense of security

"We have over 20 NT Server 3.5 servers, and any time we bring up a new server, security is replicated throughout the enterprise, increasing our disaster-recovery capabilities," Bowman said.

Symmetrical multiprocessing capabilities and the tight integration between NT Server 3.5 and database applications are two more benefits that Deaconess Health System will take advantage of in the near future.

"The fact that NT Server is sensible across multiple CPUs to larger processors means all I have to do is copy the applications and migrate the users. This will save us literally hundreds of thousands [of dollars] in application development costs," Bowman said.

Paging with a new twist

Deaconess has also developed a new software communications package called Beyond the Page, which will enable the transmission of text messages from workstations to beepers carried by hospital staff.

Beyond the Page provides Deaconess with a simple, inexpensive method of improving communication between the administration, physicians and nursing staff without using overhead pages or expensive cellular phones. The proprietary Deaconess software has proved so successful for the hospital that Microsoft Corp. is considering reselling it, according to Bob Bowman, the hospital's chief information officer.

"All in all, NT Server 3.5 makes my life much easier and makes network operations more cost-effective. And, I can look forward to the fact that new tools like Systems Management Server from Microsoft will improve network management at Deaconess," Bowman said.

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PC Magazine, Oct. 94

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BYTE Magazine, Jan. 94

"It's not more than one computer; you need LapLink for Windows."
PC Computing, Nov. 94

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Windows Magazine, Dec. 94

slapping them on your room tab.

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Security products flood net market

Smart cards, encryption technology key offerings

By Gary H. Anthes

Driven by security concerns in distributed and mobile computing, vendors recently unveiled a group of products that address encryption, user data authentication, end-to-end network security and safe electronic commerce issues.

Security Dynamics Technologies, Inc., in Cambridge, Mass., extended its line of products for user authentication into the Novell, Inc. arena with a NetWare client version of its SecurID smart card system for generating one-time passwords. The \$140 ACE/Client for NetWare lets remote users access a Novell LAN by entering a

of activity aimed at securing Internet commerce [CW, Jan. 2]. Late last year, Microsoft Corp. and Visa International, Inc. said they would develop a similar capability. And Netscape previously worked with First Data Corp. and MCI Communications Corp. in separate deals to provide Internet-based payment mechanisms protected by encryption.

Encryption for mobile users

RSA Data Security, Inc. in Redwood City, Calif., whose encryption technology Netscape uses, announced RSA Secure at its annual conference earlier this month. The hard disk encryption software was designed specifically for companies with "breeds" of remote laptops and PCs. It includes a feature that recovers files created by employees no longer available to decrypt them.

RSA also announced an encryption algorithm that it claims could replace the U.S. government's aging Data Encryption Standard algorithm [CW, Dec. 12, 1994]. For other announcements involving RSA, see chart at left.

Surety Technologies, Inc. in Chatham, N.J., announced Digital Notary System, which it claims can irrefutably certify the contents and time of creation of digital records, including those used in electronic commerce.

The system, which affixes a tamper-proof digital time stamp, could be used by lawyers who want to establish the time of evidence or contracts. It could also be used by brokerages and financial companies that want to certify trades and transactions, inventors who want to prove when something was written and vendors that take orders over the Internet, analysts said.

"The time aspect is unique; this is the first of its kind," said Thomas A. Benson, a user of the Surety product and an information systems security consultant in Palo Alto, Calif. "I view this as a harbinger of things that we can only begin to imagine, such as electronic voting, digital cash, network-based gambling and so forth."

Security guards

Products and services unveiled at the recent RSA Data Security conference included the following:

Adobe Systems	Will begin to embed encryption technology in Acrobat products
AT&T	Will enable secure selling of copyrighted digital products on the Internet via Information Vending Encrypted System
NASDAQ Exchange	Will develop a secure system for electronic trading
Oracle	Will provide secure network services for SQL Net, client/server database encryption software
TimeStep	Will offer Permit Network-Layer Security System using RSA technology for security in TCP/IP networks
Trusted Information Systems	Will provide Commercial Key Escrow system, a software that allows recovery of data if encryption key is lost
VLSI Technology	Will provide silicon-based implementations of RSA's encryption technology



At the top

Netscape recently

announced that James L. Barkdale will become its president and chief executive officer. He was previously chief executive officer of AT&T Wireless Services.

personal identification number and a short-lived password displayed on a handheld device.

Americitech Corp. in Chicago, said it already provides SecurID protection to some 20,000 users of TCP/IP networks with Unix hosts, agreed to beta-test the NetWare-based product.

Carl Tuzen, Americitech's manager of data communications security, said ACE/Client will allow employees to log on from home and from hotel rooms, something the company now "drowns upon."

MasterCard International, Inc. in New York said it will team with Netscape Communications Corp. in Mountain View, Calif., to develop a way for users to encrypt credit-card and debit-card transactions over the Internet for on-line shopping. The technology is scheduled to be operational by midyear.

That agreement is the latest in a flurry



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SOFTWARE

Enterprise Networking

BayArea Systems, Inc. has announced BeyondMail 2.0 for Intelligent Messaging Remote Access Edition, enterprise messaging software for remote users.

According to the Westboro, Mass., company, BeyondMail 2.0 for Intelligent Messaging Remote Access Edition lets mobile users compose, read and move messages, roles and forms while not logged on to the network.

In the office, the product synchronizes the user's portable mailbox with the office mailbox to reflect work done while traveling. Messages can be sorted and prioritized so a remote user dialing in to the network can request only urgent messages.

BeyondMail 2.0 for Intelligent Messaging Remote Access Edition costs \$195.

► **BayArea Systems**
(508) 898-1000

Plaintree Systems has announced WaveSwitch 100FL, a 12-port Ethernet switch based on the 10Base-FL standard.

According to the Waltham, Mass., company, the WaveSwitch 100FL integrates 12 10M bps/sec. fiber Ethernet ports with two high-speed 100M bps/sec. ports that can be any combination of fiber, 100Base-TX, 100 VGA/AnyLAN or Plaintree's fiber-optic "fast" Ethernet.

The product was designed for network managers who require more bandwidth but want to take advantage of existing Ethernet installations and equipment. When 10M bps/sec. stations access file servers connected to 100M bps/sec. ports, file server capability is increased and response delays are reduced.

Prices start at \$1,1995.
► **Plaintree Systems**
(617) 256-5800

Selectek Corp. has announced Airlan/Airian and Airlan/Bridge Plus.

According to the San Diego company, Airlan/Acces is a wireless access point to a wire's LAN that creates a 50,000-sq.-ft. roaming area for wireless workstations.

Airlan/Bridge Plus is a wireless bridge that links wires or wireless users at full network speeds in separate buildings up to three miles apart.

Airlan/Acces costs \$2,490, and Airlan/Bridge Plus costs \$5,499.

► **Selectek**
(619) 450-2220

TyLink Corp. has announced the 3600 series of data service unit/channel service units for T1 and fractional T1 services.

According to the Norton, Mass., company, the 3600 series connects routers, Cellular Digital Packet Data equipment, video encoders/decoders and private branch exchanges for transmission over T1 or fractional T1 lines.

Products in the series feature one or two data ports and flash memory. Options include Simple Network Management Protocol management and DSX-1.

compatible ports for voice or data connections for voice switching or data communications equipment.

Prices range from \$1,545 to \$3,395.

► **TyLink**
(508) 265-0603

Oricom USA, Inc. has announced the Plug and Play Token Ring ISA Adapter.

According to the Plano, Texas, company, the adapter is prepared for Full Duplex Token Ring operation through a software upgrade.

With 16 MAC addresses and support for five direct memory access channels and eight interrupt levels, users have a choice of up to 640 configuration settings. A Simple Network Management Protocol (SNMP) desktop agent provides standard information on the workstation and its network traffic to SNMP-compliant network management systems.

Driver support for the adapter is available for major network operating systems from Novell, Inc. and Microsoft Corp.

The Plug and Play Token Ring ISA Adapter costs \$299.

► **Oricom USA**
(214) 423-7569

Sterling Software, Inc. has announced SolveAccess 3.1, an IBM SNA application that provides a secure interface to the network.

According to the Dallas firm, SolveAccess 3.1 includes an interface to IBM's NetView Performance Monitor so administrators can measure individual VTAM-session response times.

SolveAccess 3.1 sends log-on screens that require users to enter valid identification and passwords that are then matched up using the product's internal facilities and standard security packages.

A session reply feature lets operators capture screen I/O from any terminal on the SNA network.

Prices start at \$30,000.

► **Sterling Software**
(916) 655-5535

ICL, Inc. has announced Embia, an Internet mail manager for PCs.

According to the Reston, Va., firm, Embia was designed for remote users over dial-up connections and provides standard mail functions and multimedia mail support.

The product supports the Interactive Mail Access Protocol and Simple Mail Transfer Protocol to reduce connect time. The software is compatible with standard Unix mail systems.

Embia costs \$99.

► **ICL**
(703) 649-3300

Product short

Connect, Inc. has introduced Connect Internet Host Service. The service provides organizations with a presence on the World-Wide Web server located at Connect headquarters. Connect designs a home page and updates information on a monthly basis. Cost: \$1,995 for setup, \$495 monthly. Connect, Cupertino, Calif. (408) 973-0110.

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Large Systems

DG REVAMPS UNIX
FOCUS TO HIGH END, '90
NEW PRODUCTS, 73

Negotiating a path to better contracts

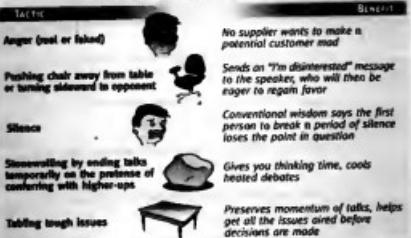
By Kim S. Nash
SAN JOSE, CALIF.

Hammering out software license agreements can be tough, tiring business. "It's like buying a car, only 10 times worse," said Janet Wulff, a procurement specialist at Hewlett-Packard Co. in Palo Alto, Calif.

Wulff and roughly 20 other users, vendors and lawyers recently attended a two-day seminar here called "Negotiating Software License Agreements." The class, sponsored by Data Tech Institute in Clifton, N.J., was designed to teach both sides of the negotiating table how to do it better.

Playing the game

Any play from practiced body language to granite-faced silence is fair in haggling with vendors over software contracts



Source: Data Tech Institute, Clifton, N.J.

Though money is at the heart of most contracts, fees should not be the only item discussed during contract talks. Due dates for products and projects, number of copies and future maintenance payments should also be on the table in terms as specific as possible.

"I have 21 contracts coming up for renegotiation in the coming weeks, so all this stuff is on my mind," said Paul Apfel, another seminar attendee. Apfel is a com-

pany manager for the state of California's Department of General Services in Sacramento, which buys PC software for statewide use.

As seminar leader Arthur Fakes put it: "To say contracts are both complex and tricky is an understatement of the greatest caliber." Fakes is also a Chicago attorney who specializes in computer industry contracts, users and vendors.

One paragraph in a vendor's standard contract may appear to grant rights or concede items to users, but beware. Subsequent passages can mitigate or even nullify preceding points, he said.

For example, the "irrevocable" right to distribute a software package might be issued early on in the contract. Then a qualifier, such as "until the termination by either party for any reason," might appear later in the document, Fakes explained.

Overall, users should nail down provisions about when and under what conditions a vendor will provide consulting or service work beyond installing the software. Don't gloss over terms such as "as soon as possible," "upon delivery," "upon installation" or "upon completion." Fakes advised. They do not mean the same thing.

Similarly, a vendor promise "to make a reasonable effort" to perform a service — say, tuning a new application to meet predefined performance standards — has been interpreted by the courts to be a lesser standard than a "best effort," Fakes said. "Best" generally means the vendor had put workers in overtime and otherwise can show that the user was given priority over other customers, he explained.

Not thinking about disaster recovery is one common

a service — say, tuning a new application to meet predefined performance standards — has been interpreted by the courts to be a lesser standard than a "best effort," Fakes said. "Best" generally means the vendor had put workers in overtime and otherwise can show that the user was given priority over other customers, he explained.

Not thinking about disaster recovery is one common

pitfall for users, Fakes said. Standard contracts from most vendors do not automatically include rights to run a database or system software on hardware other than that stated in the contract. Users must be careful to insert language that lets them run applications off-site on other machines in the event of a disaster, he explained.

Likewise, training does not get the attention it deserves, he said. Both parties should agree on the location and cost of user training before they sign any deal. Otherwise, training can become a costly "backdoor" expense, Fakes said.

Preparing for a breach

Users would do well to secure at least some nonstandard incentives in new contracts in case license fees are not enough to entice vendors to deliver as promised. For example, a performance bond can be a pricey means of making sure a supplier comes through. Typically, the vendor must buy a bond from a specialized insurer for the total amount of the contract plus a fee that equals 10% to 15% of that sum. If the vendor breaches the contract, the customer can cash the bond.

That experience can damage a vendor's reputation. And afterward, the supplier can buy only performance bonds of lesser amounts, Fakes said. "Users hate these," he said.

Incentives that are potentially less onerous to the vendor but are effective for users if a vendor should breach contracts include the following:

- Letters of credit, which a vendor must buy from a bank for all or some part of the value of the deal. If a supplier fails to perform, a customer can cash in the letter.

- Liquidated damages, which call for a vendor to pay specific amounts for each failed task.

- Bonuses, which reward suppliers when they complete a task on or ahead of schedule. Of course, not all users have a budget for bonuses.

- Credits, which are contract provisions that call for a predetermined amount of money to be subtracted from billing invoices if a vendor fails. The credit can also be determined by a predefined formula.

One-third of all customers entitled to credits never follow through, according to Fakes. Users "forget they exist, or they're afraid of damaging relations," he said.

Parallel servers

Tandem extends Unix reach, adds new series

By Mark Halper

Tandem Computers, Inc., which recent-
ly sold itself a year ago as a company committed
to aggressive performance advancements,
has held true to that image by extending a series of parallel servers and
extending its Unix line.

The K series of proprietary, nonstop
Himalaya parallel servers outperform
the earlier Himalaya K line by 60% and
300%, depending on the model, according
to the Cupertino, Calif., company. Tandem

dem's comparisons are based on inter-
nal benchmarks.

Serious about performance

The new line spans from the dual-processor
K2 model to the K10,000, which starts at
16 processors and scales to 1,090 pro-
cessors. All models are based on the
Mips Technologies, Inc. R4400 microproces-
sor. Prices for basic configurations
range from \$25,000 to \$300,000.

Howard Richmond, an analyst at
Stanford, Conn.-based Gardner Group,

Tandem's K series of Himalaya parallel servers are based
on Mips Technologies' R4400 chip

Processor speed/ Number of processors	Maximum memory	Maximum storage	Available	Price*
K200 125 MHz/4	512M bytes	184G bytes	Q2	\$70,000
K2,000 125 MHz/16	4.16G bytes	3.23T bytes	March	\$135,000
K20,000 200 MHz/4,096	10.07G bytes	16.71T bytes**	March	\$339,999

*With eight base models with no memory, storage is approximately \$1.25 per megabyte with Tandem's 1.2G drive and \$2.20 with the 4.0G drive.

**When configured with Auto precision.

said, the improvements over the Hi-
malaya K100, K1,000 and K10,000 show
that Tandem is serious about its commit-
ment to boosting performance every 12
to 15 months, a goal that Tandem Chief
Executive Officer James Trebyl de-

cided about a year ago.

Tandem introduced the Himalaya line
in July 1990, added the K10,000 about six
months later and then boosted perfor-
mance of the K1,000 last spring.

Tandem, page 67

Large Systems

Bank unit's services to rival Fed

Check processing strategy promises cost savings

By Thomas Hoffman

A recently formed subsidiary of Liberty National Bank and Trust Company of Kentucky has created a niche for itself in the check processing industry by combining its technical and business acumen with that of UPS Worldwide Logistics.

The subsidiary — Liberty Payment Services — is not the first banking outfit to provide check processing services that rival those of the Federal Reserve System. Nor is it the first to team up with a major transportation company to streamline those offerings. But the partnership is yielding some unique advantages, including low check processing costs, observers said.

Louisville, Ky.-based Liberty Payment Services was formed late last year to provide an overnight check clearing service for banks around the U.S. Executives at Liberty National seized on a 1993 regula-

tion offered an enticement to industry participants.

Under that regulation, which went into effect last year, banks whose checks were cleared by other banks before 8 a.m. the next business day could not be charged additional fees for those services.

But to lure other banks to its service, Liberty Payment Services had to figure out how to clear those checks affordably and effectively. As it turns out, one of Liberty's neighbors happens to be UPS Worldwide Logistics, a subsidiary of Atlanta-based United Parcel Service, Inc.

It takes two

After several months of discussions, Liberty and UPS decided to join forces under an agreement similar to one that had been reached earlier between First Tennessee National Corp. and FedEx Corp., both in Memphis.

Under the agreement, UPS picks up checks from Liberty's U.S. customers

and delivers them to Liberty's Louisville processing facility at night. The checks are then sorted and processed using UPS' 500 document processors.

Vital to Liberty's check processing is the use of UPS' Hem Processing System (HPS) software, which manages all document processing. The HPS software runs on two Unixys V510 mainframe computers.

Eventually, UPS will support Liberty's use of J. D. Carriger & Associates, Inc.'s CheckLink Send and Receive software for electronic check presentation (ECP). ECP will allow Liberty to transmit the processed checks electronically to client banks before the physical checks are returned to them.

According to LeGrande Rives, president of Liberty Payment Services, the relationship between Liberty and UPS has several advantages. "Most banks deal with several different third-party couriers to transport their checks around the country, and that becomes cumbersome. If there's a delay, it takes time to figure

out which courier screwed up," Rives said.

By working exclusively with UPS, Liberty is able to bundle the transportation costs with its processing costs, and the resulting cost savings are passed on to client banks. Liberty clears customer checks at a cost of 3 cents to 3.5 cents per check. That is about a penny less per check than what the Federal Reserve charges.

"We will be able to save banks anywhere from \$50,000 to \$200,000 per year" in check clearing costs, Rives estimated.

Cost savings

Promises of significant cost savings and fast turnaround led Banc One Services Corp. executives to shift some of their check clearing from the Federal Reserve and other organizations to Liberty.

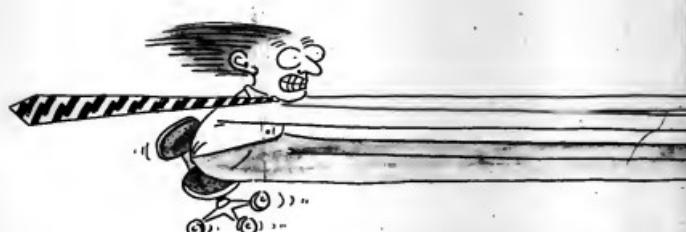
In addition to reducing the amount of time spent clearing its checks — also known as "Boats" — from two days to one, the Liberty arrangement is expected to save Banc One Services \$300,000 in annual costs, according to Leonard Hettler, assistant vice president and branch manager at Banc One Services, the bank's information technology services subsidiary in Columbus, Ohio.



LeGrande Rives: Cost savings are passed on to client banks

Making millions

Liberty Payment Services expects to be clearing 1.5 million items nightly for 95 banking customers by year's end, said company President LeGrande Rives.



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Large Systems

Tandem

CONTINUED FROM PAGE 65

"Tandem is clearly demonstrating it intends to keep putting out improved price/performance over time," Richmon said. "This is new for Tandem, and it's about as aggressive as I've seen any vendor."

Satisfied user

The announcement made an immediate impression on one of Tandem's largest users, Oak Park, Ill.-based Ameritech Corp.

"By bringing in the K20,000, we can up our performance by 40% on throughput," said Jim Kinsel, manager of development at Ameritech's network information technology division.

Ameritech currently uses Tandem's top-of-the-line Himalaya K10,000 as a decision-support system, processing 200 million to 300 million messages a day. Those messages — from Ameritech employees — represent customer responses and input that the company uses to make new product and marketing decisions.

Kinsel said the company will replace that system with a K20,000 to improve decision speed and storage capacity from Ameritech's present 1TB to 2TB bytes.



In theory, the K20,000 has a maximum storage capacity of 16,711TB bytes on a system expanded to the maximum 4,990 processors, according to Tandem Parallel Systems marketing manager Richard Hellyer. The company introduced two subsystems to improve the price/performance stand of its storage capabilities.

The user and analyst accolades punctuate an ongoing turnaround for the \$2.1 billion company, which registered \$170.2 million in earnings in its fiscal year ended Sept. 30, 1994, following a year in which it lost \$51.7 million.

Analysts have tied that turnaround to Tandem's new aggressiveness in developing products that compete against large-scale servers from Hewlett-Packard Co., IBM, Sun Computer Systems, Inc., and others. The company has also cut its costs significantly through layoffs and consolidations.

Meanwhile, analysts noted that one of Tandem's challenges is to expand its Integrity Unix line.

The company took a step in that direction by unveiling the high-end Integrity NR and Integrity FT models, based on 300-MHz versions of the R4490. The FT offers a 33% improvement gain, and the NR represents 70% performance gains over existing Integrity models, ac-

cording to the company.

Pricing on the NR models starts at \$97,000, and Tandem is making the line available now. The company will not offer the FT line until midyear and has not yet disclosed pricing.

Stephen Smith, an analyst at PaineWebber, said that by introducing the Integrity NR, Tandem will introduce an overhauled Unix series, code-named Puma, that will significantly push up the performance range. A Tandem spokeswoman declined to comment on those plans.

Meanwhile, Tandem also introduced Asynchronous Transfer Mode (ATM) networking capability for the Himalaya servers. The company said it will make its NonStop Himalaya ATM Starter Kit available in June, when it will announce pricing. The kit uses the GeoRim/Ethernet ATM gateway from Tandem subsidiary UB Networks and scales up to 12 connections per server.

Briefs

HP to ship Unix manager

Hewlett-Packard Co. said it plans to offer a tool next month for its forthcoming HP-UX 10.0 operating system that will let systems administrators allocate ample CPU time for mission-critical tasks. The Process Resource Manager, which will prioritize tasks, is a highly sought after feature, said HP 9000 Software Product Line Manager David Scott. Prices will range from \$2,500 to \$11,500, depending on the size of the HP 9000 on which it runs. Scott would not confirm whether HP will introduce the delayed Version 10.0 at the same time.

Unisys gets Justice contract

Unisys Corp. has been awarded a five-year, \$100 million contract to provide agencywide information systems maintenance and support services to the U.S. Department of Justice. The services include maintenance on multivendor midrange computers and PCs, including those from IBM and Data General Corp.



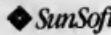
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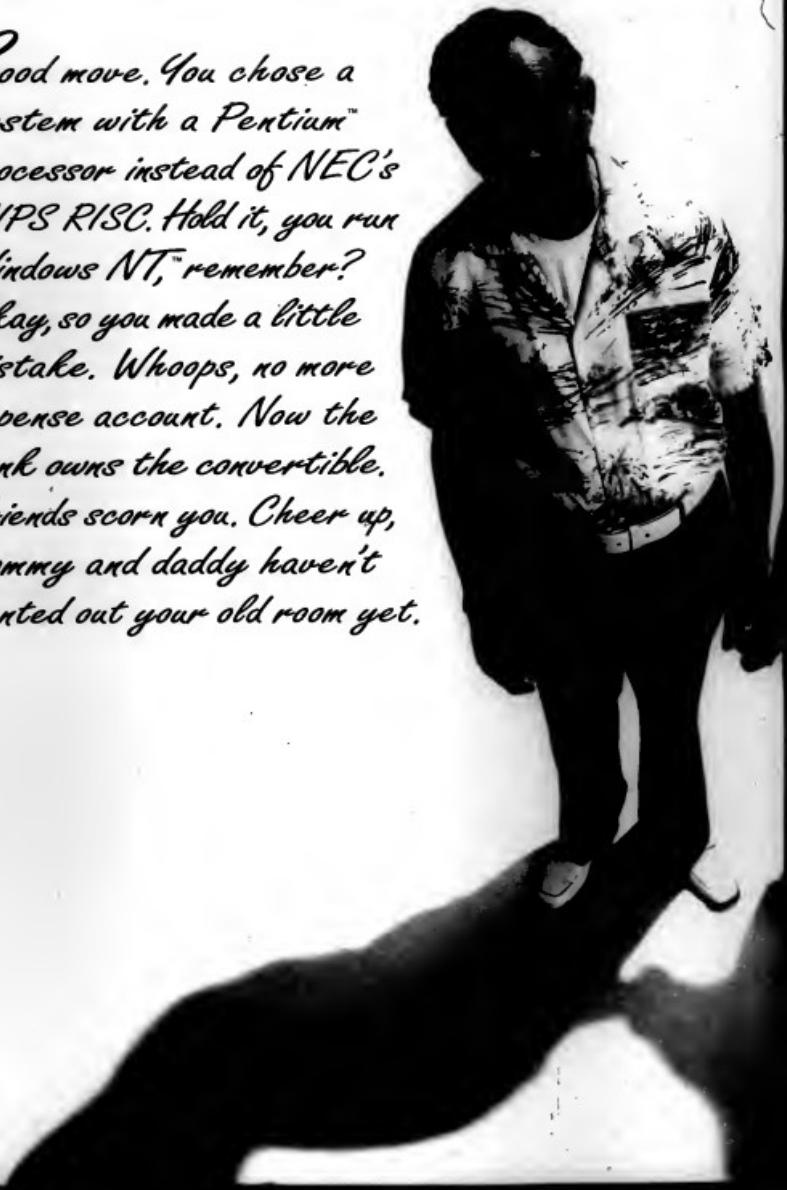
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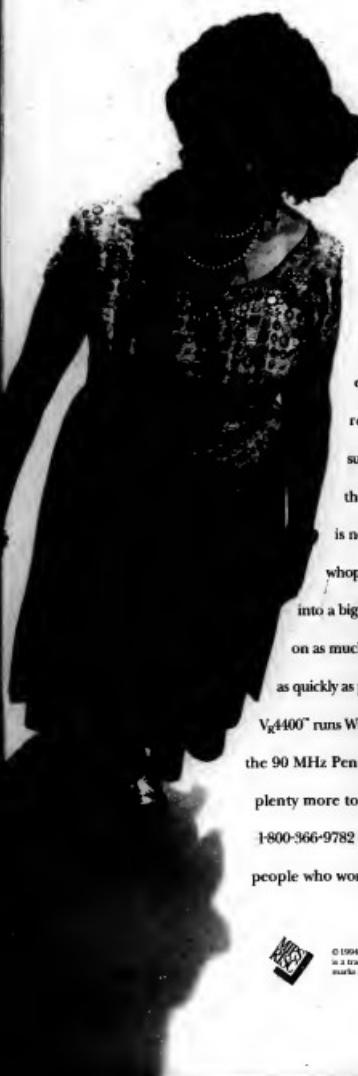
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APOD

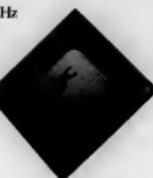
Good move. You chose a system with a Pentium™ processor instead of NEC's MIPS RISC. Hold it, you run Windows NT, remember? Okay, so you made a little mistake. Whoops, no more expense account. Now the bank owns the convertible. Friends scorn you. Cheer up, mommy and daddy haven't rented out your old room yet.





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DG unveils high-end database server

By Neal Weinberg

Pushing into the high end of the Unix market, Data General Corp. has begun shipping a database server that supports SAP AG's software suite running on Microsoft Corp. Windows NT servers.

Westboro, Mass.-based DG said its setup could save customers 25% over an all-

Unix system. The necessary equipment includes an Avion database server with Oracle Corp.'s Oracle 7 software and SAP's R/3 client/server financial software suite running on Windows NT 3.5 servers.

The idea is to offer customers a three-tiered architecture from PC to desktop server to database server, said Bob Sakeeney, an analyst at Aberdeen Group in Boston.

"It's a good move" for DG, said Jim Brennan, an analyst at WorkGroup Technologies, Inc. in Hampton, N.H. "They have a good sense of who they are and where they're going, and they're going after the database server marketplace."

According to Sakeeney, "it's a plus

for them" because it shows DG is committed to offering the best available technology, including NT, to its customers.

"They've done a good job of offering a high-performance, low-cost solution," he added.

Sakakeen pointed out that DG has revamped its strategy to focus on the high end of the market.

Attracting big guys

In fact, the deal with SAP is intended for "very large multinational companies to run their business on," said Katherine Jones, who manages DG's strategic alliance with SAP, which is in Waldorf, Germany.

She said the system has the ability to handle financial management tasks in 16 languages. "They have a good sense of who they are and where they're going, and they're going after the database server marketplace."

— Jim Brennan, Workgroup Technologies

The consumer division of Harman International Industries, Inc. has selected the

DG/Oracle/SAP/NT package for a trial that begins in about two weeks, according to Huck Shapiro, manager of information systems at Harman.

Shapiro said he selected the system

because "of its ability to support hundreds of users, its price/performance ratio and DG's service capability. He said he will begin with 120 users and plans to expand it as many as 300.

The system will be used for finance, sales and distribution for Washington-based Harman, which specializes in audio and video components.

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Source: Survey of COMPUTERWORLD CD subscribers, May 1992.

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CD1-23

Briefs

Sun to distribute Cray

SunExpress, Inc., the marketing unit of Sun Microsystems, Inc. in Mountain View, Calif., has signed a deal to distribute batch processing and automatic load balancing software developed for Unix systems by Engen, Minn.-based Cray Research, Inc.'s CraySoft division. The Network Queueing Environment software manages file transfers, job queuing and workload balancing across networks and clusters of Unix workstations and servers. While Cray is primarily a supercomputer vendor, it is now marketing a commercial processor based on Sun's SPARC microprocessor.

Conversion complete

The Securities Industry Automation Corp. has converted the computer clearing systems of the MBS Clearing Corp. to its two data centers in New York.

Theirs



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EMANCIPATE LEGACY CODE, 74
TOOL GETS WINDOWS DEMO, 75
NEW PRODUCTS, 76

PowerBuilder rises above small bugs

By Rosemary Cafasso

Powersoft Corp.'s PowerBuilder 4.0 is getting some solid reviews from early users, despite a handful of complaints of minor bugs and glitches.

"It isn't a major jump to 4.0, but taken altogether, there are a lot of small improvements," said Scott Lapish, business systems development analyst at Xerox Canada Ltd. in Toronto.

Since the latest release shipped in December, a few dozen comments have been posted on Compuserve's Powersoft forum concerning glitches in migrating



Several users are in the early stages of testing and installing 4.0. **PowerBuilder, page 75**

PowerBuilder 3.0 files to 4.0, as well as some bugs and general production faults. Powersoft claims the Compuserve traffic is to be expected this early in a product's life cycle.

In addition, the company said it is doing a better job managing 4.0 technical support. The average wait for telephone support is 10 minutes, down from 30 minutes a year ago when 3.0 was released, according to Coleman Simon, vice president of customer services at Powersoft.

Several users are in the early stages of testing and installing 4.0. **PowerBuilder, page 75**

IS model addresses 'peopleware' issues

By Mitch Betti

The same folks who brought you the five-level maturity model for improving the software engineering process are doing the same for the neglected area of "people management" in information systems departments.

The Software Engineering Institute, based at Carnegie Mellon University in Pittsburgh, has drafted a People Management Capability Maturity Model that outlines how

IT organizations can progress through five levels of proficiency at managing their human assets (see chart).

"It's a terrific addition," said software guru Edward Yourdon, editor of the newsletter "American Programmer" in Arlington, Mass. "The big criticism of the original maturity model was that it ignored people."

He said it may take five or six years for the people-oriented model to get the same visibility that its older sibling, the Software Capability Maturity Model, has achieved.

The so-called "peopleware" issues have been largely ignored for 40 years, Yourdon said, despite his understanding that good working conditions and hiring practices can generate rich productivity gains.

"Corporate bean counters have created a bullpen environment [for programmers], while the software companies in Silicon Valley treat their people like baseball stars," Yourdon said.

FOR PROGRAMMERS

Much of the draft document is written in the language of human resources specialists, but the model does address some of the nitty-gritty concerns of programmers. For example, it counsels managers to provide adequate office space and lighting and to eliminate excessive meetings.

Generally, the document describes the lowest level of people management as an undocumented, inconsistent and unpredictable process, whereas at intermediate levels there are documented and repeatable processes. At the higher levels, the model calls for quantifiable measures and processes for continuous improvement.

Companies can use the new model as a road map or yardstick for the human resources

functions — such as hiring, retention, training and career development — in the IS department. For example, the 255-page draft suggests that a mature IS organization has the following characteristics:

■ Managers in charge of hiring are trained in interviewing skills, selection techniques and employment laws and regulations.

■ New hires get a formal orientation that describes the whole business, company policies, employee benefits and IS facilities.

■ Managers are trained in defining objective performance criteria, coaching and feedback skills, performance appraisal methods, identifying career development needs and handling problem employees.

■ The organization provides adequate time and funding for training in the work skills that will be critical for the future business and technology environment.

■ Staff members participate in decision-making processes, and their opinions on working conditions are sought regularly.

■ Statistics are kept on which recruiting and training methods proved most effective.

Different paths

It is possible that an IS organization could become so bogged down in policies and statistics that it fails to get any work done. Yourdon predicted that some firms will go the bureaucratic route, while others will adopt the spirit of the model with little or no additional paperwork.

In either case, Bill Curtis, visiting scientist at the institute, stressed that the IS department should adopt the model's "best practices" for people management and not shunt it aside to the human resources department.

Curtis said the basic concept of the people management model was outlined in 1990 but was put on the back burner until last year when the project got funding from the IS departments of the U.S. Army and the U.S. Department of Defense.

The draft model is now available for public review and changes, leading to a full-edited version to be released in September. The next steps include pilot studies in the military and at commercial sites; New York-based Citicorp has already run a successful pilot project based on the same concepts, Curtis said.

Source: Software Engineering Institute, Pittsburgh

FoxPro gets new look

Microsoft database tools follow Visual trend

By Stuart J. Johnston

■ Microsoft Corp. will ship this spring a major update to its FoxPro database tool that improves on the visual design metaphor and enables developers to create Windows 95-compatible applications, the company said last week.

It also sports a new name. Visual FoxPro 3.0, currently in beta testing, features a new object model that is truly object-oriented. It also provides direct access to the Windows application programming interface, according to company executives and beta testers.

Microsoft unveiled the product to an audience of 2,400 developers at a recent FoxPro conference in San Diego.

A lot in common

Even with a crush of new features, the package maintains links with the past, giving developers the option to run existing Xbase code or convert it to Visual FoxPro's new codeless environment, according to Cristine Wiltress, FoxPro product manager.

In that area and in others, Visual

FoxPro joins Visual Basic and Visual C++ in a growing family of development tools that will share common tools and design metaphors, said Dawn Trudena, a Microsoft manager developing databases and tools. Microsoft (CW, Jan. 9). That integration and commonality will extend even to Microsoft's SQL Server. A version that begins the transition, SQL Server 95, is in beta testing.

One common feature across the Microsoft product line is support for OLE Custom Controls, Trudena said. "What we've been working toward is a product line [that serves everyone] from the end user to the enterprise developer," she added.

For its part, Visual FoxPro 3.0 adds the so-called Upizing Wizard that debuted last fall in Microsoft's Access end-user database, Trudena said. The wizard, a tool that aids developers by prompting them through a particular process, "can take database schemas and triggers and spouse them to SQL Server," she said.

Beta testers of Visual FoxPro 3.0 generally applauded Microsoft's execution on this version.

Visual FoxPro, page 74

ParaSet helps unravel legacy code

Re-engineering package adds analysis

By Tim Guelette

When the developer of a convertible bonds application at Lehman Brothers left the firm, no one who remained knew anything about the code.

"It was the program from hell," said Lloyd Altman, vice president at the New York brokerage, who searched for a way to make heads or tails of the system. He turned to ParaSet 3.0, a C++-based development environment from Software Emancipation Technology, Inc. in Lexington, Mass.

The package helped Altman reverse-engineer, compile and parse the code. "We would have been stuck, but ParaSet helped crack the nuts, so to speak," he said.

Profound impact

ParaSet 3.0 includes linked designers, editors, browsers and documentation tools. It creates and dynamically maintains a data model of all system relationships — called a parametric model — that is stored with the corresponding source code files. New features in Version 3.0 include enhanced impact analysis and automatic changes to documentation as an application's specifications are changed.

Jeff Jacobson, a technical staff member at JPL Jet Propulsion Lab in Pasadena, Calif., said he was most impressed by the para-

metric model. "We used it to reverse-engineer and put together C + objects based on some existing code," Jacobson said. "We needed the ability to get away from a cascading development plan to something that actually works."

Hugh Bishop, an analyst at Aberdeen Group in Boston, said the impact analysis feature is the most significant improvement in ParaSet 3.0. Impact analysis is done with an interactive browser that analyzes the impact of change

across the system. "If I have a class used in 50 applications and I want to change that class in one, the impact analysis will tell me maybe I shouldn't do this," he said.

Altman agreed, noting that he plans to make it a policy in the future that any planned changes to code must be accompanied by a ParaSet impact analysis. Almost always, he said, the reason a change to an existing program does not work is because "impact analysis was done."

Prices start at \$35,000 for a five-seat package.

Briefs

Software AG, HP team

Software AG of North America, Inc. in Reston, Va., said it is working with Hewlett-Packard Co. in Palo Alto, Calif., to build a parallel version of Adabas, Software AG's relational database.

Workflow package due

Ultimus LLC, a Raleigh, N.C., software developer, has introduced Ultimus Business Process Software, a workflow software package designed to help companies automate business processes. Key features include graphical process design,

process tracking and statistics and job-dependent process steps. Slated for release in late spring, the package will cost \$120 per user for 20 users and \$75 for each additional user.

Praxis ships updates

Praxis International, Inc. in Cambridge, Mass., has started commercial shipments of new versions of its Model 204 and System 1002 databases for MVS mainframes and OpenVMS systems, respectively. The Model 204 software now supports multiple processors and parallel queries, while System 1002 has options for enabling it to connect to Windows clients through the Open Database Connectivity specification.

Visual FoxPro

CONTINUED FROM PAGE 73



Visual FoxPro 3.0 is now truly object-oriented

"The new object model is really impressive. It looks like they took a lot of stuff from Visual C++," said David Anderson, a principal at Aldes Anderson, Inc., a database consultancy in Mercer Island, Wash. He also hailed the new capability to set up persistent triggers — functions that reestablish relationships when the database is reloaded. "Now we have all the right stuff to say [FoxPro] is a true relational database," Anderson said.

John Miller, owner of Perpetual Data Systems, a computer consultancy in Los Angeles, said he is impressed by a new data dictionary feature in Visual FoxPro. "It allows me to separate the business functions from the data," Miller said, adding that the separation simplifies the database development process.

Miller said he was also impressed by Visual FoxPro 3.0's new forms designer, which lets developers construct forms visually and then instantly test their functionality without having to compile the code.

Company officials said they will announce pricing when they ship Visual FoxPro 3.0 this spring. The current version, FoxPro 2.6, costs \$89 for the standard edition and \$996 for the professional database developer's edition.

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PowerBuilder

CONTINUED FROM PAGE 73

and so far have not run into serious problems. Robert Sanders, a senior information systems analyst at Wisconsin Public Service Corp. in Green Bay, experienced one general protection fault that could not be explained when converting a file to 4.0.

Others say, "I have been working it hard for the last three or four weeks, and I am not experiencing any difficulties," Sanders said.

John Collins, chief information officer at Plaza Home Mortgage, Inc., Santa Ana, Calif., agreed, noting that there are minimal bugs.

"We have seen nothing yet that makes us feel uncomfortable, and that's quite unique in the applications development tools arena," Collins said.

Plaza Home Mortgage is testing 4.0 now, and Collins said that among other things, support for Microsoft Corp.'s Object Linking and Embedding 2.0 looks to be in good shape.

Nice surprise

At Xerox Canada, developers have moved beyond testing and are using 4.0 in a sales force automation software development project. Lapish said the team had not expected much from the sample applications Powershot shipped with 4.0, but "a lot of the objects turned out to be a real blessing to our project."

Lapish said some of the objects are basic functions, but they have allowed developers to drop them into the code without having to do the work themselves. For example, one object creates a graphical representation on-screen of a lab as it would appear on a day-timer or file.

"The only complaint is the data window painter," Lapish said. "When you go into the SQL painter portion, the test editor is really lousy. They still haven't fixed that."

Demo-It comes to Windows

Multimedia boosts prototyping tool

By Ed Scannell

■ Spreadsheet inventor Dan Bricklin has released the first Windows-based version of the Demo-It prototyping tool.

The tool is a follow-up to the character-based versions that became cult classics among corporate developers in the 1980s. And like the first two versions, Demo-It for Windows from Bricklin's company, The Software Garden, Inc., in Newton, Mass., is intended to let programmers and nonprogrammers quickly produce prototype applications as well as interactive demonstrations of applications.

The new version adds multimedia capabilities such as animation and video clips for sales and marketing presentations to existing applications.

"It's still a good tool for prototyping, but now you can take a PowerPoint demo and overlay it with animation or annotate it through a simple linking of files," said Larry Fischer, president of Show & Tell, Inc., a multimedia production company in Newton, Mass.

New potential

Fischer and two other beta testers said they also see possibilities for Demo-It for Windows as a marketing tool to promote their business through a home page on the Internet.

"While we are interested in the development aspects of it, stepping back we can see the marketing possibilities

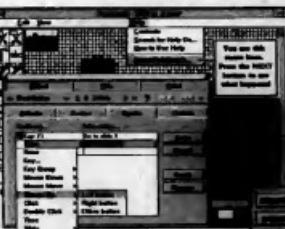
like placing advertising for our products and services over the Internet," said Tom McLaren, president of McLaren Associates, Inc. in Portland, Ore. "It could prove a good way to distribute some products."

Also well-suited to the new tool is the development of interactive tutorials, users said. For example, Demo-It for Windows can create interactive tutorials that make it easier to train novice users.

"With this, we can assemble something that looks good for about a quarter of the cost of some programs, and you don't have to be a computer head to use it," said Donna Dowdle, an executive at Dow Computer Training, a developer of on-line tutorials in Winnetka, Ill.

Demo-It for Windows uses combinations of screen captures, text and bitmaps to create various demonstrations that can include multiple text styles, bit-map graphics and sound files.

Users can also load other applications from the product and have them interact with live applications.



Demo-It for Windows includes multimedia capabilities such as animation and video

"We have designed it so if you can use something like Paintbrush, then you should be able to get up and running and be productive with this," McLaren said.

The new product was streamlined so users can run it from their floppy drive and have the option not to install it on their hard drive. For instance, the runtime version of the product requires only 1600 bytes of memory while the full version needs just 5500 bytes.

Demo-It for Windows requires Windows 3.1 running on at least a 20-MHz 386-based system with 4M bytes of memory. The product is selling at an introductory price of \$199 until March 31 but will cost \$399 afterward.

The product is available now through Lifebowl Associates, Inc. in Shrewsbury, N.J., or through Lifebowl's network of resellers.

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Application Development

Versant Object Technology Corp. has announced Versant/M, software that provides SQL and Object Database Connectivity to the Versant object database management system.

According to the Menlo Park, Calif., company, Versant/M lets users of popular decision-support tools access

object data stored in Versant and perform standard report writing and querying.

Versant/M provides legacy data integration by joining object and relational data across databases.

Prices start at \$1,500.

► **Versant Object Technology**
(415) 229-7500

Netron, Inc. has unveiled Netron/Client 2.08, graphical user interface (GUI) de-

sign software for Cobol developers.

According to the Toronto firm, Netron/Client 2.08 supports three new GUI controls and includes OS/2 drag-and-drop capabilities.

A graphical frame tree utility lets developers edit application designs in the context of the complete set of design components. A sample launcher provides sample implementations and icon and bit-map frames.

Netron/Client 2.08 costs \$3,000.

► **Netron**
(416) 626-8333

Greenbrier & Russell, Inc. has announced Objectstart 2.0 for PowerBuilder, a Powersoft Corp. PowerBuilder object tool kit.

According to the Schaumburg, Ill., company, Objectstart 2.0 features a framework for developing Multiple Document Interface applications, a set of reusable graphical controls and a flexible security object.

Included in Objectstart 2.0 is EZpaint Windows, a collection of ready-made windows with Data Windows and controls for application construction.

► **Greenbrier & Russell**
(708) 705-4000

Logic Works, Inc. has announced Erwin/Erx 2.0, a client/server database modeling and application design tool.

According to the Princeton, N.J., company, Erwin/Erx 2.0 lets users build graphical, entity relationship diagrams to capture business rules and let users forward- and reverse-engineer desktop and SQL databases.

The product connects directly to a database's system catalog and eliminates the need for preparing SQL Data Description Language script files through data administration tools.

Features include a stored procedure and trigger editor, viewing models during the edit process and data-type mapping for database management system conversion.

► **Logic Works**
(609) 855-1177

JYACCO, Inc. has announced JAM/CASE for Teamware and JAM/CASE for Innovator interfaces for Cadre Technologies, Inc. and MID/Gemini products.

According to the New York firm, JAM/CASE for Teamware links Cadre's structured method products to the JAM family of computer-aided software engineering (CASE) tools. JAM/CASE for Innovator links JAM products to MID/Gemini's Innovator Workbench CASE tool.

The JAM/CASE for Innovator interface is an add-on to JAM that lets users move information from logical models in the Innovator repository to physical models in a JAM repository.

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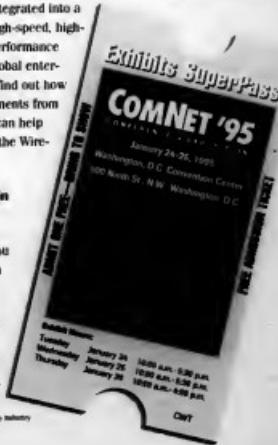
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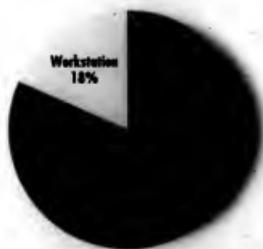
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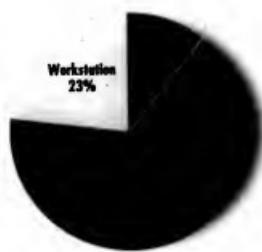
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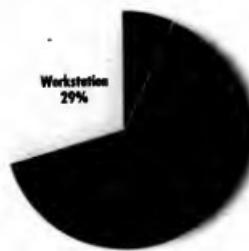
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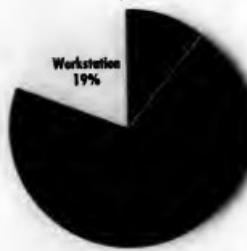
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OBJECT WORLD

Putting Objects To Work In The Real World 1995

Register for Object World Boston '95. And hear how Xerox puts OT to work.

Recently, we met with Object World session speaker Al Nugent of Xerox Corporation to talk about the impact of object technology (OT) at his company. Mr. Nugent holds the expansive title of Executive Vice President, Application Architecture and Design, Global Process and Information Management, Object Technology Competency Center (OTCC). He's also a member of the Object Management Group's (OMG) Board of Directors. This interview gives you a taste of what you can expect from the in-depth conference sessions at Object World Boston.

That's quite a title. What does it all mean?

"In a nutshell, our charter is to facilitate the adoption of modern software engineering practice using object technology at Xerox Corporation. My team, the OTCC, is responsible for managing the architecture and design of distributed object services that support the rollout of all new globally deployed applications."

How long have you been working with object technology?

"Longer than I like to think. I started using object-oriented languages back in grad school, and my career has evolved around open systems and leading edge software principles and practices. So my expertise in software development is based on understanding process, selecting, and using the proper abstractions, and focusing on design rather than code. I joined the OMG board in 1989 and have been an active member of the distributed object systems community since then."

What changes have you seen as OT has moved into the mainstream?

"Well, the big impact on our work at Xerox is that the scope has expanded to include organizational learning, the impact of technology on corporate culture, reward and recognition for object-based development, high performance teams building, collaborative work environments, effective mentoring and training techniques, and transformation of business processes into actionable systems."

How does Xerox put object technology to work?

"First and foremost, Xerox has challenged itself to be business-process driven. Our motivation for using objects is to continue to provide the best products and services to our customers. This is not technology for technology's sake. As a result, we embarked some time ago on a company-wide reengineering drive that resulted in the Xerox Business Architecture. And it's in this context that we're using OT. The object approach gives us the opportunity to

analyze and design business processes down to the work flow or task level, then easily translate the products of analysis into application design, development, and deployment."

What led Xerox to adopt object technology?

"The decision to adopt OT was made prior to my arrival at Xerox. Our worldwide CIO, Pat Wellington, and her team created IM2000, a set of key strategies to pride our information management into the next century. Our adoption of OT has been leveraged off the strong tradition of software analysis and design practices within IM and our divisions. Our legacy outsourcing agreement with EDS has provided us with a tremendous opportunity to engage business processes, integrate technology, and build new global solutions designed to make our business more effective."

What kind of benefits has Xerox realized from employing OT?

"Most of the OT work I've been describing here is now in progress. Some earlier pilot activity inside Xerox has yielded a high degree of reusability for both code and designs, quicker time to market, and a high developer productivity and satisfaction. One side effect of OT is improved communications—OT enables us to discuss the solution to the customers' problems in their own vocabulary."

What will people learn about OT at your Object World sessions?

"The first is an evangelical session highlighting the benefits and realities of OT products and services. The second is a case study of OT adoption and use at Xerox. In the case study session, I'll describe the critical success factors for corporate-wide OT adoption. I'll also provide a real-world, large-company perspective on the benefits and realities of a migration to object technology, and an understanding of the relationship between business process management, object technology, and solutions deployment. My sessions will give them a head start on realizing the benefits of OT for their companies and themselves."

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INCUBATORS OF AGILITY

BY ALAN R. EARLS

Pennsylvania's Agile Web and Silicon Valley's CommerceNet have been hailed as harbingers of America's agile manufacturing future. But so far the two networks offer little more than promises.



Sertech Industries' Stewart White is excited about the web's future

Launched formally in January 1994, the Agile Web is halfway through its two-year trial and now links a total of 20 different companies. But despite the promise to members of increased responsiveness and competitive advantage, there are still no clear successes.

Pennsylvania's Agile Web is one of two pioneering projects testing whether companies can gain a competitive advantage by joining networks of manufacturers. The Agile Web, along with CommerceNet, a California-based attempt to harness the internet, links groups of companies with complementary capabilities. These capabilities are networked in advance to better serve and solicit customers [CW, Nov. 7, 1994].

In particular, small companies might benefit from becoming linked to a virtual company such as the Agile Web. Working together, members could provide products and services they would be unable to offer alone. The customers, pundits promise, would beat a path to their door.

So far, however, companies involved with both of these efforts say the early results are inconclusive.

Funding for the Agile Web comes, in part, from the federal government's Advanced Research Projects Administration. This includes both the technology infrastructure and information systems staffing because few of the member companies possess dedicated users. The balance comes from the participating companies.

Incubators of agility, page 82

INCUBATORS OF AGILITY

CONTINUED FROM PAGE 51

The effort's long-term goal, according to Mark Lang, executive director of the Ben Franklin Technology Center in Bethlehem, Pa., sponsor of the Agile Web, is to give member companies capabilities previously unavailable to them. By becoming cooperative enterprises instead of competitors, supplier companies can acquire new business practices and technology tools and an enabling infrastructure to create newer, faster and smarter processes, Lang says.

LOOKING WITHIN

These broad goals were enough to attract Surftech Industries in York, Pa., to the project. Sales and marketing manager Stewart White says his firm started with a leg up on some of the other web members. Four years of electronic data interchange (EDI) links with a large customer gave his people the experience of working with others from a distance. Thus, rather than spending the first year of web membership "getting up to speed" on electronic communications, the period has been a spur for other forward-looking internal changes, including an effort to secure International Standards Organization 9000 certification, White says.

"We are excited about the future of the web, and we have learned, as a group, what kinds of customers to approach with our combined capabilities," White says.

On the same tack but with a bottom-line emphasis, web member Bill Strosack Jr., president of Electro Space Fabricators in Toppen, Pa., says simply, "This technology is going to help our customers get to market quickly."

The job of wiring the members to the web and getting them to think electronically falls on Dwayne Hansen, the de facto chief information officer of the Agile Web and director of manufacturing initiatives for the Ben Franklin Partnership. With the help of Plymouth Meeting, Pa.-based web member Datamatrix, Han-

sen has emphasized starting simple and relatively low tech.

Hansen says the Agile Web uses a value-added network that is supplied by Datamatrix but operates over the Avantis network owned by IBM and Sears. Roebrick and Co. Datamatrix provides EDI-type transmissions and electronic-mail software and transmissions. Datamatrix also has a number of software products for Internet use and may eventually develop a product to capture the lessons of the web.

In the meantime, several Agile Web members are still getting up to speed on EDI and are not yet using it as a group, Hansen notes. For some, efforts to date involve just sending test screens and mock requests for proposals over communications networks to see how it would work company-by-company.

THE SAME BUT DIFFERENT

With its roots in Silicon Valley, CommerceNet is at once similar to the Agile Web and very different. Billing itself as the first large-scale market trial of true electronic commerce on the Internet, CommerceNet's philosophy might be described as: "If we build it — they will come."

CommerceNet is also partly funded by the federal government, but unlike the Agile Web, this group is made up of both large and small companies and is actively seeking new members. Consultants and other service providers have even been invited to join the fun, gratis for now.

According to executive director Cathy Medich, companies join CommerceNet to gain the benefits of an agile web or virtual company. Like members of the Agile Web, they hope to support a variety of commerce by acting as collaborative enterprises rather than competitors.

In particular, Medich says members hope to shorten procurement cycles through means such as on-line catalogs and on-line ordering and payment processing. And CommerceNet should be able to shrink development cycles for manufacturers by 50% by supporting collaborative engineering between customers and vendors and among cooperating firms in a web-like arrangement, Medich says.

Like Surftech Industries, CommerceNet member Avex Electronics Corp. in Fremont, Calif., is out new to the idea of doing business electronically. As a supplier of circuit boards and other electronic manufacturing capabilities, Avex has

long had communications links to its sophisticated customers, explains Mike Gordon, manager of electronic commerce at Avex.

Gordon says that with access provided by CommerceNet, he now expects to gather significant cost savings by using the Internet to transmit engineering information used to set up and manufacture PC boards. Traditional EDI transmission charges are based on file size while the Internet has no such constraints, making it free or very inexpensive to use.

"Until CommerceNet, the Internet hadn't been secure enough for us," Gordon says.

Now CommerceNet offers members features such as connectivity — T1, 56K bps, frame-relay and integrated Services Digital Network software tools to pull services or information about their company on any Internet host; Mosaic (the Internet navigation tool created by the National Center for Supercomputer Applications), which lets users explore multimedia and develop standard electronic forms; and on-line directories to locate and access CommerceNet member services or information.

LEAPING BOUNDARIES

The key to all of CommerceNet's ambitious efforts to make its electronic links pervasive, secure and robust is data encryption, Gordon says. "A final solution from the CommerceNet partners appears to be on the near horizon," he adds.

But encryption is just the first hurdle for setting up an agile, net-like organization in Silicon Valley. The next hurdle is developing a complete set of standards, according to Ken Ouchi, vice president and CIO at Selectron Corp., a supplier to the electronics industry that is considering CommerceNet.

"Our company is working on this with a number of customers," Ouchi says. Although some aspects are old hat, Ouchi says much needs to be done to get all companies to adhere to compatible ways of communicating. "It will have to cover everything from purchase orders and checks to how parts are specified."

In the meantime, Medich says members are developing pilot programs such as Internet-based catalogs, methods for supporting purchasing and fund transfers and issues specific to linking manufacturers.

Anita Schiller, director of electronic markets at CommerceNet member Silicon Graphics, Inc. in Mountain View, Calif., says her company is excited about the network, including its potential to impact actual manufacturing. But Schiller

"We are excited about the future of the (Agile Web), and we have learned, as a group, what kinds of customers to approach with our combined capabilities."

STEWART WHITE, sales and marketing manager, Surftech Industries, York, Pa.

"Until CommerceNet, the Internet hadn't been secure enough for us."

MIKE GORDON, manager of electronic commerce, Avex Electronics, Fremont, Calif.

says agility should not be the system of choice. Instead, businesses should think of their technology as enablers and the practices they imply as something new, which she calls collaborative manufacturing.

Although not all the goals of CommerceNet or the Agile Web have been realized, participants agree the groundwork for something new is being prepared. There is a pervasive sense of excitement driven by the knowledge that change will be the way of life if businesses are to survive and prosper.

As Hansen observes, within the Agile Web, the first project looked a lot like "business as usual." Now, however, each attempt reveals that companies are beginning to configure themselves differently while finding innovative ways to operate, Hansen says.

Earkin is a freelance writer in Franklin, Mass.

WHAT IS THE AGILE WEB?

"The Agile Web is a network of small businesses ... that have agreed to prequalify each other, so they can combine their collective core competencies to serve clients whose needs exceed the capabilities of any one of them. ... The companies involved view their principal strategic benefit to be new business opportunities."

STEVEN L. GOLDMAN, ROGER H. NAGEL AND KENNETH PRESS, from their book, *Agile Competitors and Virtual Organizations* (New York: Van Nostrand Reinhold, 1995)

FOR MORE INFORMATION

FOR INFORMATION ABOUT THE AGILE WEB CONTACT:

Douglas Rausch
Manager of Manufacturing Initiatives
Ben Franklin Technology Center
125 Franklin Drive
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TurnOff, Tune

Even hard-driving IS managers and hardwired techies need to get away from it all. Veteran travel and business writer MELANIE MENAGH reports on eight great, affordable places to unplug and unwind.

It's an occupational hazard of the modern world: **technoburnout**. Telltale symptoms: finger fatigue, ringing in the ears, coughing up statistics, loss of vision and an unquenchable thirst for escape.

Not a pretty picture. The only antidote is to get away—really far away—where phone, fax and CRT cannot follow. Of course, technology, insidious creature that it is, has insinuated itself even into the farthest reaches of the planet, but there are places where the leaves on the ground are as thick as a network software manual. Eight such places follow, spread around north America.

While all destinations offer exquisite escape, several key criteria were considered in choosing them: All are remote and not too difficult, costly or time-consuming to reach. They are perfect places to do nothing, but they also provide a variety of more active pursuits, such as hiking or horseback riding, rock climbing or racquet sports, that don't require advanced skills or major outlays of cash. Most are open year-round.

JOSHUA TREE NATIONAL PARK, Southern California

Surroundings: mountains, desert

Activities: hiking, rock climbing, bird-watching, biking

Nearest airport: Palm Springs Airport, drive of 30 to 45 minutes

Joshua Tree National Park covers about 560,000 acres of mountains and plains. Located at the juncture of the Mojave and Colorado deserts, the park features a stupefying array of otherworldly sights. Principally, these are forests of Joshua trees, which look like lunatic prophets shaking their twisted limbs at the heavens. Along the 45-mile drive through the park are coyotes and rattlesnakes, citadels of 10-story boulders, hidden valleys once favored by cattle rustlers and Keys View, which overlooks wave upon wave of mountains.

Accommodations: Campsites in the park are free (no on-site water) or \$8-10 (with on-site water), (619) 367-7311.

La Quinta Resort and Club, 49-499 Eisenhower Drive, La Quinta, Calif. 92253, (800) 589-3828. A Hollywood hideaway built in the 1920s and set on hundreds of manicured, blossoming acres, La Quinta is a sports person's dream. It offers five championship golf courses, 30 tennis courts (grass, hardcourt and clay), swimming pools and whirlpool spas. Guest casitas range from spacious doubles to the presidential suite (the name to golf); request one with a view of the Santa Rosa mountains enveloping the property. The food is superb, and the crackerjack staff caters to your every whim. Rates for doubles start at \$210.

BAYOU COUNTRY, Southern Louisiana

Surroundings: swampland

Activities: bayou and plantation tours, fishing, bird-watching

Nearest airport: New Orleans Airport, one-hour drive

An odyssey through the swamps in a quiet boat, rousing an alligator from his nap or a heron from her nest, has the feel of journeying through the forest primeval. The delta region is a subtropical jungle of cypress and oak festooned with Spanish moss. Nearby, restored plantations are open for browsing. This is Cajun country, where a piquant gumbo of French, Spanish and African influences has spiced up the language, food and music.

Accommodations: Houma-Terrebonne Tourist Commission, (800) 685-2732.

Le Jardin Sur Le Bayou, 256 Lower Country Drive, Bourg, La. 70343, (504) 564-2722. A comfortable, relaxed, Cajun-style bed-and-breakfast on 26 acres of gardens and ponds. Rates start at \$60.



Out, Drop Inn

NORTHEAST KINGDOM, Northern Vermont

Surroundings: mountains, lakes

Activities: hiking, biking, cross-country and downhill skiing

Nearest airport: Burlington Airport, one-hour drive

It's said that some parts of the Northeast Kingdom are so inaccessible that no one has ever bothered to claim them. The kingdom is a territory of fjord-like lakes and church-steeped towns that are quintessential Vermont. Springtime here is heady with the long-awaited greeting of the mountains; summer is leisurely with (literally) breathtaking swims in cascade pools; in the fall, the maple-covered hills ignite with crimson and amber; and winter brings the steady, satisfying swish of skis.

Accommodations: Craftsbury Sports Center, Craftsbury Common, Vt. 05827, (800) 729-7751. Lodging ranges from dorm rooms to trailside cabins. Activities include tennis, canoeing, sailing, fishing, sculling, horseback riding and cross-country skiing. Rate is \$62 for bed-and-breakfast.

CANADIAN ROCKIES, Southern Alberta and British Columbia

Surroundings: mountains, lakes

Activities: hiking, horseback riding, cross-country and downhill skiing, Robin rafting

Nearest airport: Calgary, Alberta or Spokane, Wash., airports, each about a three-hour drive

With spurs and Sisal at the ready, it's time to saddle up for riding on top of the world.

North of the border, the Rockies are somehow more wild and magnificent. A massive conglomeration of national parks straddle British Columbia and Alberta, where milky peaks are perfectly mirrored in glacier lakes. Cattle ranches take in visitors who can help with all equestrian activities. Try taking the train: Call Rocky Mountaineer Railtours, (800) 665-7245.

Accommodations: Three Bear Ranch, SS3, Site 19-62, Cranbrook, British Columbia, V1C 6H3 Canada, (604) 425-5250. This 35,000-acre cattle ranch has room for 40 guests in cozy log cabins. Meals are taken in the lodge, which features a huge fireplace. Guests can join ranchers for herding or take trail rides. Features include Jacuzzi, indoor pool, hot tubs, river rafting, tennis and fishing. Rate is \$168 (Canadian) per person and includes three meals per day.

BOUNDARY WATERS CANOE AREA WILDERNESS, Northern Minnesota

Surroundings: lakes, forest

Activities: canoeing, fishing, cross-country skiing, dog sledding

Nearest airport: Duluth Airport, 2½-hour drive

This system of several thousand lakes and streams covers 2 million acres on the Minnesota/Ontario border. Canoeists/campers can follow in the footsteps of French fur traders, navigating pristine lakes connected by a network of portaging trails. One can go weeks at a time without seeing another creature — except black bears, grouse, wolves and walleye pike. Outfitters will supply everything from canoes to food to guides. Nearby lodging is centered in Ely or along the Gunflint Trail.

Accommodations: Beartooth Lodge, 275 Gunflint Trail, Grand Marais, Minn. 55649, (218) 388-2292. Choose from rooms in the main lodge, townhouses or housekeeping cabins in a lakeside wood. Dining is family-style. Features include cross-country ski trails and hot tubs. Rates for two-bedroom cabins start at \$56.

Burntside Lodge, 275 Burntside Lodge Road, Ely, Minn. 55731, (218) 365-3804. The lodge, which is listed in the National Register of Historic Places, began construction in 1913. Log cabins built by local craftsmen line a large lake. There is a family-style dining room, sandy beach and sauna. Rates for one-bedroom cabins start at \$80.

Turn off, page 86



Turn Off, Tune Out, Drop In

CONTINUED FROM PAGE 85



MONT PELEE, Martinique, French West Indies
Surroundings: Caribbean volcanic island, rain forest
Activities: swimming, fishing, hiking, sailing, scuba diving
Nearest airport: Fort-de-France Airport, drive of two to three hours, depending on route and traffic

The north end of Martinique is remarkable for Mont Pelee, a dormant volcano that wiped out the town of St. Pierre, the "Paris of the Caribbean," in 1902. A rain forest grew in the rich volcanic soil, with an extensive system of walking trails and waterfalls, exotic flowers, birds and butterflies. When Pelee erupted, ships sank in the harbor; La Compagnie de la Baie de St. Pierre operates a 55-person submarine to view the wrecks and the coral gardens they spawned (telephone 10-596-781818).

Accommodations: Plantation Leyritz, 97218 Bassee Pointe, Martinique, French West Indies (10-595-585582). Set amid banana and pineapple groves, Leyritz is a museum by day, hotel by night. Guests stay in restored colonial buildings, and never know who did the pottery. Features include a French-Creole dining room, pool and tennis courts. Transportation to the beach is provided. Rates for doubles start at 650 French francs and include breakfast.

FEB. 19-25

Marketech '95, Houston, Feb. 19-21 — Contact: Food Marketing Institute, Washington, D.C. (202) 652-6444.

Business Process & Workflow Conference, Orlando, Fla., Feb. 19-22 — Contact: BIS Strategic Decisions, Norwell, Mass. (617) 674-6942.

Orlando Multimedia '95, Kissimmee, Fla., Feb. 22-24 — Contact: Society for Applied Learning Technology, Winter Park, Fla. (407) 247-0055.

Transition to the New Computing Environment, San Diego, Feb. 23-25 — Contact: Ahley Pierce, Gartner Group, Inc., Stamford, Conn. (203) 967-6774.

FEB. 26-MARCH 4

SAC '95: 1995 Symposium on Applied Computing, Nashville, Feb. 25-28 — Contact: Jim Hightower, Association for Computing Machinery.

CALIFORNIA ISLANDS, Georgia Coast

Setting: barrier island
Activities: swimming, fishing, nature walks, bird-watching
Nearest airport: Jacksonville, Fla., Airport, 1½-hour drive

Cumberland Island, former playground of the Carnegies, is now primarily a national park. Although the size of Manhattan, it is shared by only 300 people who take the ferry from the mainland. While many islands are now overrun with resorts, Cumberland has remained blissfully "unimproved" — no stores, no cars, no TV. Beyond the high dunes that are home to wild ponies and deer are miles of empty soft-sand beach. Cumberland lies along a main migratory route, and local pelicans, herons and egrets are joined by peripatetic flocks.

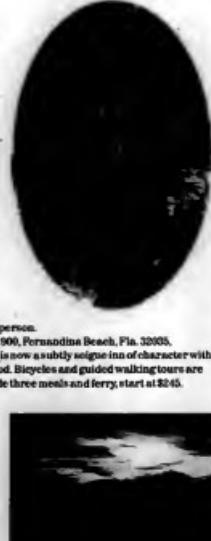
Accommodations: Camping is free, but reservations are a must at (912) 669-4335. Ferry service is available at \$10 per person. Greyfield Inn, 8 North Second St., P.O. Box 900, Fernandina Beach, Fla. 32035, (904) 661-6408. The 1901 Carnegie manse is now a subtly elegant inn of character with low-country furnishings and excellent food. Bicycles and guided walking tours are available. Rates for doubles, which include three meals and ferry, start at \$245.

LOS CABOS, Baja, Mexico

Surroundings: mountains, desert, beach
Activities: swimming, sailing, deep-sea fishing, whale watching
Nearest airport: San Jose del Cabo Airport, 15-minute to one-hour drive

Located at the southern tip of the California peninsula, Los Cabos (The Capes) is a land of extremes: the Sierra de La Laguna mountains overshadow subtropical forests of cacti and yucca surrounded by the crashing surf of the Pacific Ocean and the Sea of Cortez. Offshore, gray whales come to mate and calve. Overhead, peregrine falcons search for food. Of the two towns, Cabo San Lucas is busier and the hub of sport fishing activity; San Jose del Cabo is less touristy and more traditional.

Accommodations: Presidente Inter-Continental Los Cabos, Boulevard Mijares s/n, San Jose Del Cabo, Mexico 23400, (800) 327-0200. In the quiet enclave of San Jose, this hotel is tucked away at the corner of an endless beach between the sea and a pool surrounded by palm and cactus garden. Plan on a breakfast buffet on the patio, lunch in a thatched palapa on the beach and dinner in the formal dining room. Tennis courts and a disco are also on hand. Rates for doubles start at \$129.



Calendar

Glendale, Calif. (310) 625-6902.

The PC Nightmare Symposium, Orlando, Fla., Feb. 27-March 1 — Topics include upgrades and alterations, disposition, obsolescence, software, maintaining standardization and assessing risks, including expert and management.

Contact: International Computer Negotiations, Inc., Winter Park, Fla. (407) 740-0780.

Effective Methods to Manage and Control a Work Process, Orlando, Fla., Feb. 27-March 2 — Contact: Quality Assurance Institute, Orlando, Fla. (407) 386-1111.

Engineering Document Management Systems Focus '95, Orlando, Fla., Feb. 27-March 2 — Contact: Kalhoff Group, Cincinnati, Ohio (513) 794-3367.

Workforce Joining the Islands of Automation, Chicago, March 2-3 — Early registration fee is \$1,066; regular registration fee is \$1,200. Con-

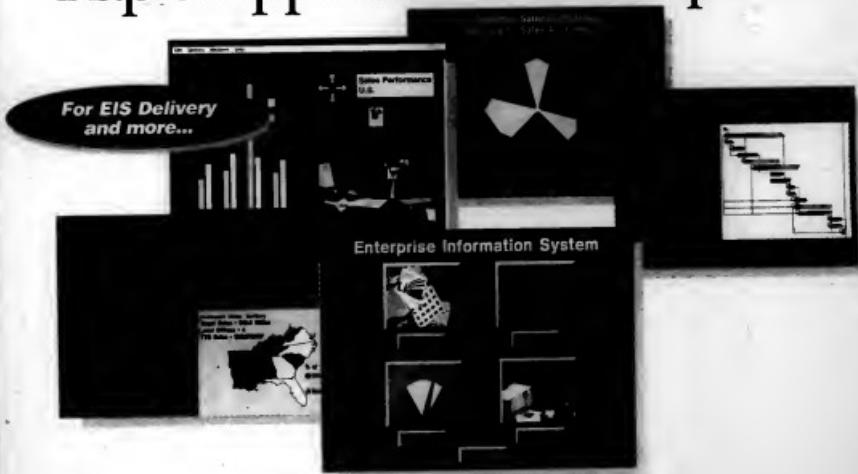
act: Delphi Consulting Group, Boston, Mass. (617) 587-1055.

MARCH 5-11

The Sixth Annual Expanded International Help Desk Conference, San Francisco, March 5-6 — Seven conference forums examine key issues, including planning, implementing and supporting a help desk or related support service. Contact: Help Desk Institute, Colorado Springs, Colo. (719) 531-6136.

The Workgroup Solutions Conference and Expo, Boston, March 5-6 — A packed tour of groupware, including improved electronic meeting facilitation techniques; maximizing return on investment; global collaboration; groupware for heterogeneous architectures; animating field personnel; developing workflow applications; integrating groupware with legacy systems; and administration and security issues. Contact: David Coleman, GroupWare '95, San Francisco, Calif. (415) 282-8192.

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The CW Guide to Enterprise Network Management

Getting a grip on your nets



As client/server schemes threaten to make the best-laid networking plans go haywire, enterprise platform vendors are slowly inching their way toward more distributed products

Enterprise network management has never been more difficult. Client/server computing, more network-intensive applications and ever more decentralized organizations defy the traditional centralized approach of the major network management platforms.

Fortunately, help is on the way. Market-leading players Hewlett-Packard Co., IBM, Sun Microsystems, Inc. and Cabletron Systems, Inc. are beginning to deliver management tools that adapt to the new distributed world.

For years, users have been promised truly enterprise-wide network management platforms. Our Buyers' Sat-

isfaction Scorecard documents the shortfalls of the current crop of products.

In addition, we look at the fast developing world of client/server and enterprise systems management and its impact on network management operations.

Users are also choosing another alternative: systems integration. This solution to network management woes provides the control users need without requiring investment in staff training or the ability to predict a product's future. Firing Line examines this option through a close-up of AT&T Corp.'s network management offering.

Read on for insight into the latest vendor strategies and user views of the delivered products.

ENTERPRISE SYSTEMS MANAGEMENT
Most enterprise systems management tools are trying to combine the best of both worlds. [PAGE 92](#).



COMPUTERWORLD'S FIRM LINE
Look at AT&T's Enterprise Network Management Services as an alternative to doing it yourself. [PAGE 96](#).



BUYERS' SATISFACTION SCORECARD
Find users of leading network management packages, Celeron's Spectrum, HP's OpenView, IBM's RView and SunSoft's SunNet Manager. [PAGE 97](#).

BY ELLISABETH HORWITT

If you plan to invest in an enterprise network management software platform today, don't do it without taking a peek at the plans of the leading vendors. The technology is about to change very quickly.

During the next few months, SunSoft, Inc. in Mountain View, Calif., Hewlett-Packard Co. in Palo Alto, Calif., and IBM's Raleigh, N.C., network software group are expected to start delivering what, up until now, they have only promised: a flexible, scalable, integrated management platform that minimizes the grunt work and technical expertise needed to manage a corporate networking installation.

On Jan. 30, Sun will ship Solstice, its next-generation, object-oriented architecture, which will integrate its existing SunNet Manager as a centralized management system, and Ensemble, a new enterprise network and systems management platform. IBM and HP will follow with initial releases of their Karat and Systems platforms, respectively, this summer.

Users briefed on the above products report that — at least on paper — they sound vastly superior to today's offerings: HP's OpenView, Sun's SunNet Manager and IBM's NetView for OS/2 and NetView for AIX.

In addition, hub vendor Celeron Systems, Inc. in Rochester, N.H., is launching its own upgrade plan to keep its Spectrum product among the technology leaders.

Looking the third-party support of the Top 3 systems vendors, Celeron is giving them a run for their money by surpassing IBM in market share this year, according to Kirk Villars, a network systems analyst at International Data Corp. in Framingham, Mass.

Spectrum's strength is based on already-delivered distributed technology, something the other vendors plan to roll out later this year. This technical edge is evident in superior user satisfaction ratings in our Buyers' Satisfaction Scorecard (see page 97).

True client/server management?

Of particular interest to users in the next generation's promise of effective management not only of the physical network itself, but of client and server systems on that network.

Users such as TVSM, Inc. are eagerly awaiting IBM's Karat because "we have a small IS staff and do not think we can manage multiple [client/server] systems without something like it," says John Spiewak, information services director at the Horsham, Pa., cable television guide company. "We want light-weight management" of a data center that will consist not of IBM hosts, but of a network of clients and AIX-based servers, he says.

However, users' optimism is tempered by questions about how quickly vendors can roll out the full range of features and applications they promise. Vendors confirm it will be a year or two from the rollout before the platforms have advanced features such as a common, object-oriented repository for management data.

The following descriptions are by users and analysts of key features of the upcoming platforms and how they will fit into corporations'

What management software does best

Based on Buyers' Satisfaction Scorecard survey of 182 users. Ratings are based on a 1 to 10 scale where 10 is the best performance.

	Score
Reliability	7.8
Overall performance	7.5
Compatibility with standards	7.5
Consistency of product components	7.4
Accuracy of traffic reporting	7.3

What management software does worst

	Score
Ease of use	6.7
Enterprise-wide management	6.6
Ease of implementation	6.5
Cost	6.2
Third-party support	6.0

"My utopia would be that I could basically ask, 'What's up?' in the network and have it give me a picture of what's going on. The management software would go out and tell me about all devices and do what-if analysis."

— FRANK BELLANDO, a senior communications consultant at Martin Marietta Corp.

long-term network management strategies.

All three systems vendors promise a distributed architecture, similar to Celeron's Spectrum, consisting of multiple domain servers, each responsible for managing a different group of users, devices or systems. The servers will synchronize information about key events and changes in their own domains and report alerts to a central management station.

Paul Edmunds, an information technology professional at Duke Power Co. in Charlotte, N.C., hopes that by "breaking up [management pooling] more effectively" into distributed stations, HP's Tornado will be able to handle more users and devices than the centralized OpenView. "Our current system appears to be overtaxed just by [Simple Network Management Protocol] collection."

A consistent point of view

Perhaps the second-biggest complaint users have about today's platforms is the lack of a common framework for viewing, collecting and analyzing management data, and initiating action that would extend across all their management applications and managed systems.

For example, the network manager should be able to schedule key network jobs such as backup up to start automatically, and if a particular job doesn't run correctly, a fault-management system should kick in to locate and hopefully fix the problem, says Holly Kerr, a technical consultant at Cummins Engine, Inc. in Columbus, Ind. "That takes a great deal of integration and data exchange between tools."

All three upcoming platforms will enable various applications to store and access management information on a distributed relational database management system. Currently, only Spectrum has such a database.

Sun's Solstice will include an object-oriented framework based on NetLabs, Inc.'s Dimensions 3G. The framework will allow management applications and domain servers to query or perform management tasks across groups of devices that they can flexibly define, such as all backbone routers, Sun says.

However, applications will not be able to freely share information about network systems' and devices' configurations — a high priority for users — until platform vendors come out with a common repository with common management object definitions. Such repositories are likely to show up in 1996 to 1997, vendors say.

With such a repository in place, "You wouldn't have to have data stored and collected redundantly; all applications would go to the same place to get information about software performance, hardware and software inventory," Spiewak says.

Users are united in their desire to eliminate the need for expert human intervention in network management wherever possible.

Most companies seem to afford to hire or train a large cadre of "supergeeks" who understand not only network management, but the innards of various systems and how to query a database and generate a report, says Frank Bellando, a senior communications consultant at Martin

Marietta Corp.



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Enterprise systems management software will either overtake or be folded into network management, but will it help users solve their integration problems?

Merging managers

BY AVERY L. JENKINS

Figuring out what's happening with corporate networks and systems has never been easy. With the advent of client/server and distributed architectures, this job just got a whole lot harder.

One solution being developed by the leading vendors of network and systems management products is a merger of their tools that would place all the information about an enterprise at the fingertips of the information systems staff.

However, many unresolved issues remain, and neither systems nor network management vendors is quite comfortable with this symbiotic relationship.

IS staffs must also adapt. Increasingly, systems managers and even database administrators must have access to the data and tools that, to date, have been the province of network managers.

In the distributed environment, applications performance is no longer solely tied to processor, disk and memory utilization. Performance and availability are also highly dependent on network functionality, configuration and performance.

Today's tools for systems and network management each have different strengths, says Waverly Deutach, an analyst at Forrester Research, Inc. in Cambridge, Mass. Network management "is focused on hubs, routers, wiring and similar elements," she says. Systems management "has a much stronger understanding of servers, applications and data."

Holistic management

Forrester is predicting an eventual mixture of the two types of management tools to create what Deutach calls "holistic systems management."

This management software would work in the following way. An administrator attempting to distribute a new version of a software package to a number of machines might discover that an error was being caused by faulty software that the transfers to a specific host could not be completed.

The problem might be a full disk, trouble overwriting a file of the same name, a malfunctioning router or a host that is down.

The "holistic" systems manager would have a

view of the network management system, allowing the user to quickly pinpoint the trouble, whether it lay in the network or in the systems.

"We are certainly looking for that" type of capability, says David Dushnick, manager of technical operations at CCH, Inc. in Riverwoods, Ill. Dushnick's staff uses OpenView from Hewlett-Packard Co. and Unicenter from Computer Associates International, Inc. in Islandia, N.Y., to manage CCH's distributed systems.

"We are all struggling with trying to get to the place where we have some of the tools we were accustomed to in the past," he says, when the mainframe environment provided a seamless, integrated control system.

That time is probably gone for good, Deutach says. "The industry has moved away from the integrated systems style of the early 1980s to the best-of-breed style of the late '80s and '90s."

This means, until the pendulum swings again, users are faced with piecing together a patchwork quilt of tools that work together in a somewhat uncomfortable harmony.

"At the moment, what [the systems management vendors] are doing is simply coexisting with network management platforms," says Paul Mason, an analyst at International Data Corp. in Framingham, Mass. However, the "integration is not that good," he adds.

Vendor claims disputed

Mason's assessment disputes the claims made by the leading distributed systems management tools vendors, which are taking pains to assure the consumer that they are moving their systems toward greater coexistence with network managers.

CA, for example, recently announced support for Simple Network Management Protocol (SNMP) in its CA-Unicenter product. Other vendors, such as Tivoli Systems, Inc. in Austin, Texas, with its Tivoli Management Environment and Legent Corp. in Herndon, Va., with AgentWorks, are providing similar support of SNMP agents.

Utilizing SNMP agents is one of the key methods systems management vendors are using to gain access to the network management side of the house, according to Jill Huntington-Lee, president of Broadway Networks.

—PAUL MASON, analyst,
International Data Corp., Framingham, Mass.

N

etwork Associates in Cincinnati. "At the lowest level, you have software agents that reside on a Unix server or database that do some localized polling and tracking of systems statistics," she says. These agents then forward the data to a central control console, which may be the systems manager or the network manager.

Products such as Ecotools from Compuware Corp. in Farmington Hills, Mich., use good use of this agent technology to perform database or application monitoring and "a little bit of network management as well," Huntington-Lee says.

In more advanced systems such as HP's View OperationsCenter or the Tivoli Management Environment, this console employs rules or expert systems programming to take the correct action.

The CW Guide to Enterprise Network Management

Huntington-Lee predicts that the greatest level of crossover between network and systems management will occur in fault and performance management.

Agents are particularly well suited to automating tasks such as load-balancing, which would incorporate network data but not deal directly with network equipment.

In the works

Leading systems management products and what they provide for enterprise network management

AGENTWORKS

Legent Corp., Herndon, Va.
800/375-4708

SNMP support and agent technology with general console tools for fault, configuration, performance and systems management tasks. Strengths remain with systems management, however, and features such as load balancing and performance monitoring.

ECOTOOLS

Compaqware Corp., Farmington Hills, Mich.
906/836-9707

Uses agent technology, but its strengths are in database management, network management. Can provide some remote monitoring.

OPENVISION

OpenVision Technologies, Inc., Mountain View, Calif.
408/967-8220

Strength remains in enterprise management. Used for specific purposes in conjunction with other tools, rather than a comprehensive solution.

TIVOLI MANAGEMENT ENVIRONMENT

Tivoli Systems, Inc., Armonk, N.Y.
914/784-0770

An all-in-one management system, its strengths are less as a common enterprise manager and more as a management platform than pieces that can be woven into other systems, such as Hewlett-Packard's OpenView. Recommended by a strong user base.

UNICENTER

Computer Associates International, Inc., Indianapolis, Ind.
800/225-6224

Recently adopted a server-based design. Strong systems management, but weak on the network side. Best for companies that need mainframe-type systems control. A "wild card" for consolidation in the combined systems/network management console market.

Forrester's holistic management concept divides the products into two layers.

The higher layer is what Deutsche calls the "masters of the universe" console, which provides a complete, overall view of the system and the network from data fed from the second type of product, the "local command server."

"Pillies get pushed down to the local level by the masters of the universe, and the local server enforces them," Deutsche says. "Functions are then automated as much as possible at the local level." However, "the local command server level does not exist yet," she says. "That's in the future."

How far in the future?

"I think it might start to happen in 1996-97," Huntington-Lee says.

Jenkins is a freelance writer in Aspinwall, Conn.

Getting a grip

CONTINUED FROM PAGE 89

Marietta Corp. Vendors need to provide graphical interfaces and under-the-cover utilities that serve the user from this technology, he adds.

Some organizations have even chosen to completely outsource their network operations rather than invest in internal staff. (See Firing-Line, page 86.)

"My utopia would be that I could basically ask, 'What's up?' in the network and have it give me a picture of what's going on. The management software would go out and tell me about all devices and do what-if analysis," Bell said.

No platform vendors have this now, he adds, although HP promises better reporting tools and an enhanced application builder.

Both HP's Tornado and Sun's Solstice will include an event-oriented, based on NetViewCenter from NetLabs in Los Altos, Calif., that will be able to trace the source of a problem from multiple incoming alerts. IBM claims it already offers a similar feature.

The correlation is one of the main reasons why B.C. Systems, a Victoria, British Columbia, network and computer service provider wants Sun's Solstice, says Son Kozan, a network analyst. "If something higher up on the chain of command goes off, you want to squalch all the [other] alarms and say, 'This is the real problem,'" he says.

Solstice will also enable users to program responses that automatically kick in when a device changes state, Kozan says. For example, a device going from "up to down" might trigger a red alert on a manager's screen, while a "down-to-up" change might set up an informational alert.

The three vendors also promise that their graphical user interfaces will provide greater consistency in terms of how users view data from and issue commands to various management applications and managed systems.

One major question that remains, however, is how quickly can vendors extend all of the above leading-edge capabilities to the all-important management applications that do the work,

Bell said. "The issue gets down to when the framework providers let key [independent software vendors] into the development cycle," he says.

All three vendors say they have formed working groups where they provide independent software vendors with the application programming interfaces (APIs), software developer's kits and the support to integrate their products into the new platforms.

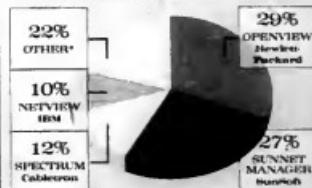
However, the lack of a common repository will severely limit the level of integration such platforms can provide for applications, says John McConnell, president of McConnell Consulting, Consulting, in Boulder, Colo.

Sun is providing a DynaLink Library to enable applications written to SunNet Manager to run on top of Solstice, a company spokesman says. However, applications must be written directly to the Solstice APIs to access the object-oriented management information service, he adds. A number of vendors that have done this will be announced at the formal introduction.

Between the three platforms will be how quickly vendors will field a truly distributed architecture, McConnell says. "What we have now is dispersed frameworks—multiple servers that can't really share information and applica-

HP, Sun, Cabletron lead 1994 shipments

Cabletron saw year-over-year gains from IBM and Sun while NetView products stopped competing directly and became incorporated into other products. AT&T selected HP's OpenView, and Digital is using IBM's NetView.



Source: Information Data Corp., Birmingham, Mass.

tions that can't get information when they need it."

"To me," McConnell says, "distributed means multiple platforms that collaborate, share information and reorganize their control structure so that, for example, if one fails, another can take over."

While the systems vendors may not be able to provide the full realization of this dream in the next six months, at least they will be laying the foundation.

"To some extent right now I can piece together a tool set of stand-alone network management products that cover the gamut of tasks I need to perform as a network manager," Karra says.

However, it is hoped that IBM's next-generation platform will provide the integration and automation of those tools that approach the main-frame environment — and that would let a relatively small pool of people provide management from a central point across the organization, Karra adds.

"That's what we're excited about," he says.

Horwitz is a freelance networking writer in Woburn, Mass.



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COMPUTERWORLD FIRING LINE

Users avoid complexity through AT&T outsourcing

BY KEVIN BURDEN

Enterprise networks in many Fortune 500 companies are growing at a rapid pace. And with few viable enterprise-wide network management packages to help tame the expanding webs, some users are opting to off-load the responsibility to systems integration companies with network management expertise. Enter AT&T Computer, arguably one of the most networking-savvy companies.

AT&T, having left the competition as a provider of all-encompassing enterprise-wide network management software to Hewlett-Packard Co., Sun Microsystems, Inc. and IBM, has chosen to be the all-encompassing network management outsourcing vendor. It provides single-vendor responsibility for managing day-to-day aspects of users' networks. Users can contract for AT&T to run operations through its Enterprise Network Management Services Operations Center or by placing AT&T personnel on-site.

AT&T often uses a combination of its own Accumaster Data Transport, which manages the physical transport layer, and OneVision, a management platform based on AT&T's Biosphere and HP's OpenView.

This Firing Line presents users' views of AT&T's Enterprise Network Management Services. Evaluators included technical persons from an aerospace firm, a land transportation company and a diversified services company. The format for this evaluation was prepared with assistance from Howard Rubin Associates and Technology Investment Strategies Corp.

Planning and optimization

One of AT&T's strengths is helping users optimize and plan the future direction of their network. But evaluators said this work requires a thorough knowledge of the equipment as well as the business.

Aerospace company: "The first AT&T people we had on-site were very familiar with AT&T networks but not

at all familiar with end-to-end service. So we had to teach them that the network is not just made up of circuits but users as well. It was difficult to get them to think that way. Also, because AT&T's people are union, we had several issues to work out like when they can take a break [as] opposed to when the contract says they can take a break."

Transportation company: "We had to take the AT&T people on customer site trips so they could go to the physical locations so they could see and understand the environment they were supporting. When they saw the long lines at the ticket counter, it made sense real quick. We have had to continue this every year because AT&T continues to rotate people out."

Performance reporting

AT&T reports the good along with the bad through daily, weekly and monthly performance reports. When serious network failures occur, all the users said they knew about the event and the action taken to correct it.

Diversified services company: "We get several standard reports, but what we are most impressed with is the quick turnaround of additional reports often requested by our upper management."

Scalability

Only one evaluator put AT&T through the test of adding a significant new technology to an existing network. The project was completed by on-site AT&T staff members, and the cost was part of the original contract.

Aerospace firm: "I just completed a frame-relay cutover for 40-plus sites in six weeks. One of my people managed the team from AT&T, and in retrospect, the disruption of business was very minor for a project of this magnitude."

WAN management

Once the service was set up, the evaluators who had AT&T staff on-site said they were very confident of AT&T's ability to handle day-to-day operations. Evaluators whose networks were managed at the operations center said AT&T's ability to efficiently communicate network problems and fix them could be better.

Transportation firm: "When we have a superior system that uses our tools in conjunction with AT&T's. After two months [training period], I was com-

AT&T responds

AT&T OneVision's relationship with HP's OpenView

"We have found that our customers are more inclined to invest in open standards. And because a large number of our customers already have Hewlett-Packard's OpenView platform, our decision to incorporate it as part of OneVision's had a lot to do with OpenView's dominant market share."

forible enough with their ability that I could start releasing people to other areas of the company."

Diversified services company: "We do not have any engineering types on staff, so we are fully dependent on AT&T's ability to work with us. Our biggest problem have been with AT&T's change-management process. There have been several instances where there have been communication breakdowns where AT&T made network changes, but no one here was properly notified."

The evaluator said once formal processes were instituted, the problems were corrected.

Cost

Users choose outsourcing for a variety of reasons, including reducing personnel or equipment expenses.

The evaluators said passing the management responsibility to AT&T resulted in cost savings.

Aerospace firm: "The reliability of our network has improved to the point where we virtually have no outages, so we pulled out a tremendous amount of redundant circuitry, which saved us a lot of money."

Transportation company: "AT&T simply gave us a price that was cheaper than what we were doing [it]. We were able to distribute the networking people we had to other areas. We no longer have the high skill level centralized in only one location."

Diversified services firm: "When our business requirements [for] us rolled a WAN, we knew the only expertise we had in-house were the folks managing our LANs. It would have been far more expensive [to] start this ourselves."



Enterprise Network Management Services

AT&T

Whippany, N.J. • (800) 428-1881

Ratings are based on a 1 to 10 scale where 10 is extremely satisfied and 1 is not at all satisfied. Ratings represent the average of the four users' satisfaction ratings weighted by the category's importance. Total score is the average of all ratings.

EVALUATION SCORE	
Network planning and optimization	7.0
Performance reporting	7.2
Scalability	7.4
WAN management	6.7
Cost	7.0
	6.9

AT&T's Enterprise Network Management Services Operations Center in Whippany, N.J.

Users choose to outsource their network management to companies like AT&T because they lack expertise or the resources to invest in the experts and software.

"When our business required that we roll out a WAN, we knew the only expertise we had in-house were the folks managing our LANs. It would have been far more expensive if we had to start this up ourselves."

- Network manager at a diversified services company that uses AT&T services

BUYERS' SATISFACTION SCORECARD

Strong on troubleshooting,
weak on the enterprise

BY KEVIN BURDEN

The Buyers' Satisfaction Scorecard findings confirm what the market has already found: Cabletron Systems, Inc.'s Spectrum is better at satisfying users' needs for enterprise network management than its competitors.

The evidence? Spectrum earned the highest user ratings in the Scorecard, and a gain in market share last year placed it third in shipments, ahead of IBM's NetView.

Spectrum remains one-up on its competition as the only current management platform with a true, distributed object-oriented database engine. This feature helps users correlate information among various applications, boosting ratings for alarms

Mission impossible?

The major network management platforms received low ratings for their ability to perform as true enterprise managers. Users rated their satisfaction with management capability 2.66 out of 5.0 averages. Yet they ranked it among the Top 10 in importance. This mismatch has long been the complaint of network managers. But some analysts say that perhaps it's a mission impossible.

"There may never be a true off-the-shelf enterprise-wide network management package because the speed of network technology changes faster than network management technology. Even if a vendor understood the

problem and created a management package that could easily be adaptable from one site to another, the cost of creating such a product would price it clear out of the range of most users."

JILL HUNTINGTON-LEE, president, Brandywine Network Associates, Cinnaminson, N.J.

and traffic management. Spectrum's competitors rely on separate applications that don't have a common data model to share.

Cabletron's offering might not be so unique after its competitors deliver the latest generation of network managers. But for now, only Spectrum's client/server architecture can run multiple copies of its interface on any server.

"It's definitely the most sophisticated of all the platforms because of its distributed and modeling functions," says Richard Villars, networking systems analyst at International Data Corp. in Framingham, Mass.

OpenView
Hewlett-Packard Co.'s OpenView was second only to Spectrum in user ratings in most areas. Its major weakness was its lack of a distributed architecture and its inability to efficiently correlate alarms.

Spectrum's artificial intelligence suppresses secondary alarms so administrators quickly know where the real problem is. OpenView does not have the same kind of filtering, according to Jill Huntington-Lee, president of Brandywine Network Associates in Cinnaminson, N.J. This factor had a negative impact on its scalability and enterprise management ratings.

NetView for AIX

IBM's NetView for AIX is making significant headway in scalability, as shown by its high score for enterprise management, via a separate module called Systems Monitor for AIX. Reliability and performance ratings were bolstered by these enhancements, but weaknesses remain in porting and LAN management. One of NetView's biggest problems is its multiple protocol possibilities. IBM provides separate versions for mainframes, LANs and Unix.

Third parties have yet to port NetView applications to OS/2 on a broad basis, according to Villars.

Users rate their satisfaction with top network management platforms

User satisfaction ratings are based on a 1-to-10 scale, where 10 is best. Total score is the average of ratings weighted by the category's importance to that vendor's users. Categories are listed in order of importance to all users.

Response base: 50 users for HP and Sun, 45 for IBM and 37 for Cabletron.

	SPECTRUM Version 2.4 Cabletron Systems, Inc., Norwell, Mass. (800) 322-8400	OPENVIEW Version 3.0 Hewlett-Packard Co., Palo Alto, Calif. (800) 454-7000	NETVIEW/AIX Version 3.0 IBM, Research Triangle Park, N.C. (800) 454-7000	SUNNET MANAGER Version 2.2 SunSoft, Inc., Mountain View, Calif. (800) 454-9543
Reliability	7.1	7.0	6.7	6.3
Technical support	7.7	7.6	7.5	7.0
Standards compatibility	7.3	6.8	6.7	6.2
Ability to manage LANs	7.0	7.1	5.6	5.5
Performance	6.7	6.8	6.7	6.1
Accuracy of traffic reporting	6.4	6.3	6.3	6.1

SunNet Manager

As the ratings show, SunSoft, Inc.'s SunNet Manager has some major weaknesses: How well it supports LANs directly correlates to how well it supports Novell, Inc.'s NetWare because that network operating system represents 70% of the LAN market. In SunNet Manager's case, that ability is zero. "You're also talking about Windows environments as well as Novell, and SunNet Manager is strictly Unix. There isn't even any third-party application available to help with this coordination," Huntington-Lee says.

On the performance front, SunNet Manager does not support Simple Network Management Protocol natively. Instead, it requires remote procedure calls to communicate and perform protocol conversions. "The main disadvantage to this proxy architecture is that it slows down performance," Huntington-Lee says.

Burden is Computerworld's senior researcher. Firing Line/Scorecard.

The Results



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Gateways

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Best Price/Performance	IBM
Best Service/Support	IBM
Best Documentation	IBM
Prefer To Do Business With	IBM

Routers

Best Technology	Cisco
Best Price Performance	Cisco
Best Service/Support	IBM
Best Documentation	Novell
Prefer To Do Business With	Cisco

Electronic Mail/Messaging Software

Best Technology	Lotus Development Corp.
Best Price/Performance	Microsoft
Best Service/Support	Microsoft
Best Documentation	Microsoft
Prefer To Do Business With	Microsoft

PC LAN Operating Systems

Best Technology	Novell
Best Price/Performance	Novell
Best Service/Support	Novell
Best Documentation	Novell
Prefer To Do Business With	Novell

Peer-to-Peer Operating Systems

Best Technology	Microsoft Windows for Workgroups
Best Price/Performance	Microsoft Windows for Workgroups
Best Service/Support	Microsoft Windows for Workgroups
Best Documentation	Microsoft Windows for Workgroups
Prefer To Do Business With	Microsoft Windows for Workgroups

Token Ring Adapters

Best Technology	IBM
Best Price Performance	IBM
Best Service/Support	IBM
Best Documentation	IBM
Prefer To Do Business With	IBM

Intelligent Wiring Hubs

Best Technology	Cabletron Systems
Best Technology	IBM
Best Price/Performance	Syntex Communications
Best Service/Support	IBM
Best Documentation	IBM
Prefer To Do Business With	IBM

LAN Servers: General File/Print Servers

Best Technology	Compaq Computer Corp.
Best Price/Performance	Compaq Computer Corp.
Best Service/Support	IBM
Best Documentation	IBM
Prefer To Do Business With	Compaq Computer Corp.

LAN Servers: Applications Servers

Best Technology	Compaq Computer Corp.
Best Price/Performance	Compaq Computer Corp.
Best Service/Support	IBM
Best Documentation	IBM
Prefer To Do Business With	Compaq Computer Corp.

LAN Remote Access Servers

Best Technology	Novell
Best Price/Performance	Novell
Best Service/Support	Novell
Best Documentation	Novell
Prefer To Do Business With	Novell

Super Servers

Best Technology	Compaq Computer Corp.
Best Price/Performance	Compaq Computer Corp.
Best Service/Support	IBM
Best Documentation	IBM
Prefer To Do Business With	Compaq Computer Corp.
Prefer To Do Business With	IBM

Portable PC Network Adapters

Best Technology	Xircom
Best Price/Performance	Xircom
Best Service/Support	Xircom
Best Documentation	Xircom
Prefer To Do Business With	Xircom

Ethernet Adapters

Best Technology	3Com
Best Price/Performance	3Com
Best Service/Support	3Com
Best Documentation	3Com
Prefer To Do Business With	3Com

Network Analyzers

Best Technology	Novell
Best Price/Performance	Novell
Best Service/Support	Novell
Best Documentation	Novell
Prefer To Do Business With	Novell

Cabling Systems

Best Technology	AT&T
Best Price/Performance	AT&T
Best Service/Support	AT&T
Best Documentation	AT&T
Prefer To Do Business With	AT&T

Terminal Emulation

Best Technology	IBM
Best Price/Performance	Novell
Best Service/Support	IBM
Best Documentation	IBM
Prefer To Do Business With	IBM

Workgroup Application Software: Calendaring/Scheduling

Best Technology	Microsoft
Best Price/Performance	Microsoft
Best Service/Support	Microsoft
Best Documentation	Microsoft
Prefer To Do Business With	Microsoft

Workgroup Application Software: Integrated Office Software

Best Technology	Microsoft
Best Price/Performance	Microsoft
Best Service/Support	Microsoft
Best Documentation	Microsoft
Prefer To Do Business With	Microsoft

Workgroup Application Software: Info Sharing/Conferencing Software

Best Technology	Lotus Development Corp.
Best Price/Performance	Lotus Development Corp.
Best Service/Support	Lotus Development Corp.
Best Documentation	Lotus Development Corp.
Prefer To Do Business With	Lotus Development Corp.

UPS

Best Technology	American Power Conversion
Best Price/Performance	American Power Conversion
Best Service/Support	American Power Conversion
Best Documentation	American Power Conversion
Prefer To Do Business With	American Power Conversion

The 1994 IS Brand Preference Studies on Local-Area Networks and Wide-Area Networks were conducted among Computerworld subscribers to determine which brands of products are preferred among information systems professionals. A brochure on each study is available. Contact your Computerworld sales representative for a copy or call Party White at 800-343-6474 ext. 169.

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these top ranking companies
Preference Studies on
and Wide-Area Networks.



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General Communications Software
Best Technology Novell
Best Price/Performance Microsoft
Best Service/Support Microsoft
Best Documentation Microsoft
Prefer To Do Business With Microsoft

PC Communications Software:
PC-to-Host Software
Best Technology IBM
Best Price/Performance IBM
Best Service/Support IBM
Best Documentation IBM
Prefer To Do Business With IBM

Backup Hardware
Best Technology Conner
Best Price/Performance Conner
Best Service/Support Conner
Best Documentation Conner
Prefer To Do Business With Conner

Backup Software
Best Technology Cheyenne Software
Best Price/Performance Cheyenne Software
Best Service/Support Cheyenne Software
Best Documentation Cheyenne Software
Prefer To Do Business With Cheyenne Software

RAID Storage Systems: Small-scale
Best Technology IBM
Best Price/Performance Compaq Computer Corp.
Best Service/Support IBM
Best Documentation IBM
Prefer To Do Business With IBM

RAID Storage Systems: Medium-scale/Large-scale
Best Technology IBM
Best Price/Performance IBM
Best Service/Support IBM
Best Documentation IBM
Prefer To Do Business With IBM

T1/T3 Multiplexers

Best Technology AT&T/Paradyne
Best Price/Performance AT&T/Paradyne
Best Service/Support AT&T/Paradyne
Best Documentation AT&T/Paradyne
Prefer To Do Business With AT&T/Paradyne

Channel Extenders

Best Technology AT&T/Paradyne
Best Price/Performance AT&T/Paradyne
Best Service/Support AT&T/Paradyne
Best Documentation AT&T/Paradyne
Prefer To Do Business With AT&T/Paradyne

V.32/V.32bis/V.42/V.42bis Modems

Best Technology Hayes Microcomputer
Best Price/Performance Practical Peripherals
Best Service/Support Hayes Microcomputer
Best Documentation Hayes Microcomputer
Prefer To Do Business With Hayes Microcomputer

PCMCIA Fax/Modems

Best Technology Hayes Microcomputer
Best Price/Performance Practical Peripherals
Best Service/Support IBM
Best Documentation Hayes Microcomputer
Prefer To Do Business With Hayes Microcomputer

Facsimile Machines

Best Technology Canon USA
Best Price/Performance Canon USA
Best Service/Support Xerox
Best Documentation Xerox
Prefer To Do Business With Xerox

Facsimile Boards/Gateways

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Best Price/Performance Intel
Best Service/Support Hayes Microcomputer
Best Documentation Hayes Microcomputer
Prefer To Do Business With Hayes Microcomputer

Common Carriers

Best Technology AT&T
Best Price/Performance AT&T
Best Service/Support AT&T
Best Documentation AT&T
Prefer To Do Business With AT&T

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Best Price/Performance Hewlett-Packard
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Packet Switches

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Best Price/Performance Motorola/Codex
Best Service/Support Motorola/Codex
Best Documentation Motorola/Codex
Prefer To Do Business With Motorola/Codex

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Best Price/Performance AT&T/Paradyne
Best Service/Support AT&T/Paradyne
Best Documentation AT&T/Paradyne
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Interactive VSAT Networks

Best Technology AT&T/Tridom
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COMPUTERWORLD

The Newspaper of IS

In Depth

INTERNET tough GUYS

By Garrett W. Ray

If you visited the Comdex computer trade show in Las Vegas last fall, you may have spotted a brand new on-line service chock-full of music videos, entertainment news and promotions for upcoming movie releases.

But this service wasn't another offshoot of CompuServe or America Online, and you couldn't purchase an account to use it. It wasn't even the product of a registered Comdex exhibitor. Rather, it was a brand-new information service launched only days earlier by one of the world's top entertainment companies, MCA/Universal Studios in Universal City, Calif.

How this free on-line service came to be displayed in more than 20 Comdex exhibition booths reveals much about the guerrilla marketing potential of the Internet's World-Wide Web and partially explains the torrent of interest in Internet browser programs such as Netscape and Mosaic. It also explains why companies are joining the Internet in droves.

Only days after putting the final touches on MCA/Universal's Web server, which in fact links to www.mca.com, George Bremer, MCA/Universal Information Ser-

Ray formerly a Computerworld editor, is an Internet consultant based in Washington and Boston. He can be reached at garrett@erols.net.

INTERNET CHAMPIONS fight security fears, bandwidth problems and unrealistic user expectations to bring CUSTOM ON-LINE SERVICES and GLOBAL E-MAIL to their businesses



INFORMATION INTERNET TEAM MEMBERS (from left) George Bremer, Paul Sternberg and Mark L. Johnson look over the World Wide Web at the MCA/Universal Studios server.

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vices' chief information officer, cruised the Comdex show floor and covertly started the company's Web-based information service "on all the Mosaic screens I could find," Bremner recalls. "At the end of the day, there were at least 20 Comdex booths" prominently displaying MCA/Universal's new Web-based information service, he says.

The ease with which Bremner simultaneously launched and promoted MCA/Universal's new Web server (and by extension, the company's entertainment products) partially accounts for the explosive interest in using the Internet as a marketing and promotional tool. Many companies are also finding immediate paybacks in the "net's" ability to cut across geographic boundaries with its built-in global electronic mail.

These two capabilities — customized on-line services through the Web and global E-mail through the "net" —

zif.com, it seems U.S. companies of all stripes are scrambling for that short and spiffy Internet domain name, if only to announce to customers and clients, "We are on the 'net."

FIRST CHICAGO CAPITAL MARKETS

THE GOAL IS TO PUT BANKING CREDIT-CARD SERVICES ON THE NET

"There's a geometric explosion in the Internet, and the logical extension is that our corporate and public sector clients will be on this track," says John Gilchrist, chairman and president of First Chicago Corp.'s First Chicago Capital Markets (FCCM). "We want to be there with them."

Big draws for Gilchrist are the ability to use the World-Wide Web to present information about FCCM's products and services on a global scale, the potential to strengthen client relationships by showing them how they might use the Internet and

the popular Mosaic browser for the World-Wide Web.) In the course of that consultation work, Gallagher got his initial glimpse of Mosaic and the proliferation of companies that use the World-Wide Web to promote their products and services.

While he realized the potential for FCCM to use the Web for similar promotion of its financial products, Gallagher's more immediate and pressing need was to have an E-mail system that would allow him to communicate with the firm's dozens of educational and institutional clients. These clients generally use the Internet (rather than commercial services such as Computerserve or MCI Mail) for internal, day-to-day communication.

Gallagher mentioned Mosaic and Internet E-mail to another FCCM colleague, investment officer Paul Stephenson, who is a longtime user of innovative technology at the firm and who also serves as an informal computer expert. Because Stephenson "didn't see it as anything major" and because Gallagher "presented us because we were working with these [institutions] and wanted to send them E-mail," Gilchrist quickly approved a purchase order for a few Internet accounts and the domain name www.fccm.com. That's when the fun began.

Within a matter of weeks, Gilchrist, Gallagher and Stephenson had seen enough of the World-Wide Web to determine its great potential as an adjunct to the marketing brochures and booklets currently produced for FCCM's clients, in particular, they agreed that many of the firm's marketing information materials — economic charts, client lists and general information about FCCM — could easily be scanned from their current glossy brochure format and included in an on-line Web server.

FCCM — a major underwriter of bonds and financial instruments for the University of Chicago in Cook County, Ill., and a host of other universities and municipalities — began to use the Internet only last August. As with many companies, that first encounter was through a strange mix of serendipity and word of mouth that increasingly illustrates how the Internet is making inroads into the most staid of corporate firms.

The ball began rolling last spring when FCCM managing director Mark Gallagher, who also sits on the Illinois Board of Education, began working on educational financing issues with the National Center for Supercomputer Applications (NCSA) at the University of Illinois. (NCSA is the home of

The number of Internet domain names with ".com" at the end (signifying commercial users) grew 36% in the fall of 1994.

give a clue to the startling growth of the Internet.

According to a recent study by the Internet Society, a Reston, Va., standards association, new Internet participation grew a robust 21% in the third quarter of 1994.

Not surprisingly, the greatest increase came from the swarms of businesses signing on to the Internet for the first time, rather than the traditional Internet base of research and academic users. According to the Internet Society, Internet domain names with ".com" at the end (signifying commercial Internet users as opposed to educational or military users) grew an astonishing 36% in the fall of 1994. Such growth rates could drive the Internet to 100 million host computers by 1998, the society reports.

So who's signing up? Just about everyone, including such notables as the London Stock Exchange (stocks.com); Mastercard International (mastercard.com); the well-connected Washington law firm of Covington & Burling (cov.com); and cable TV shopping network QVC, Inc. (qvc.com). From asthrm.com to

Mosaic and the long-term promise of conducting banking and credit-card transactions over the Internet, (partner company First Chicago Corp., with \$63 billion in assets, is the third-largest issuer of credit cards in the U.S.) Competitive pressures are also a factor because a number of other banks, such as New York's J. P. Morgan, have recently launched their own Web services.

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POLITICS FOR INTERNET WORKERS

1. At a high level, because the World-Wide Web involves a public process, marketing materials and long-term strategies, top-down advocacy works best.

2. Provide end-users with initial, job-specific guidelines to good Web sites, then let them create the Web at their own pace.

3. Start small. Low-cost Internet Serial Line Internet Protocol (SLIP) accounts can be your best advocates for introducing top firms to the Web. The SLIP protocol allows you to establish full Internet connectivity using standard telephone lines and standard medium-length or dedicated lines and specialized hardware such as routers.

4. Find a cost-justification for Web access with Internet E-mail accounts, which are only marginally more expensive than other commercial E-mail carriers.

5. Consider starting your own World-Wide Web service through a Web service provider rather than bringing equipment and connectivity in-house. A list of such providers is at <http://slip.saint.net/~paul/NET-MARKETING/www-providers.html>.

6. Make sure your departments are deeply involved in planning and designing Web page content.

7. Identify users away from proprietary on-line services. Many advocates say these users will be more receptive to the Web and not the other way around.

8. Become a "net activist." You can't be an advocate if you don't know the Web.

data and financial charts, Stephenson says.

Currently, the company uses an outside Internet service provider as the central storage site for its Web pages. Stephenson remains uncertain about bringing an Internet server *Internet, page 102*

Internet

CONTINUED FROM PAGE 101

in-house. He cites connectivity, hardware and support costs as reasons to take a gradual approach.

Cohen & Grigsby, P.C.

USERS CLAMOR TO GET HOLD OF ON-LINE LEGAL INFO

At the Pittsburgh law firm of Cohen & Grigsby, P.C., Kevin J. Sullivan, director of technology, is adamant that the firm is in experimental, ramp-up mode when it comes to the Internet. Sullivan, who launched the Internet domain cohensullivan.com in August, says, "I don't offer [clients] full connectivity yet because I'm not prepared to support it" with the hiring of an Internet administrator. "It's not in the budget this year."

But he also says the benefits of the World-Wide Web are so striking that the firm eventually plans to install an internal Unix or Microsoft Corp.'s Windows NT server and hire an administrator to run it.

The 75-attorney law firm began its own Internet adventure with E-mail. Sullivan added an Internet E-mail account to his attorney UniCode, a Coda Protocol (LUCP) mail gateway to the firm's existing Lotus Development Corp.'s CCMail network. LUCP mail is a store-and-forward system that allows E-mail to be transferred to and from an outside Internet service provider periodi-

cally. The materials there, which include copyright law, the full text of the Uniform Commercial Code and decisions from the Supreme Court and U.S. Court of Appeals, have been a strong hook for some of the attorneys.

"Once they get their hands on the Web, I can't get them out of my office to go back to legal practice," Sullivan says. "You can see the gears turning."

Market, Cohen & Grigsby's vice president of technology, "We're trying to get all of our clients on E-mail because it's an effective way to do business."

In the case of one client, however, the Cohen & Grigsby technical staff "routinely checks their gateways to make sure it's not down." In the firm branching into systems support? "I hope not," Market laughs. "There's no money in it."

Although Sullivan is currently the only staffer with direct access to the Internet, he says that will change rather quickly because the Web offers a growing number of legal resources of interest to staff attorneys. Cohen & Grigsby attorneys have become enamored with Web-based legal resources at Rutgers University (www.rutgers.edu/law/www.html) and Cornell University (www.law.cornell.edu). The materials there, which include copyright law, the full text of the Uniform Commercial Code and decisions from the Supreme Court and U.S. Court of Appeals, have been a strong hook for some of the attorneys.

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needs to be ironed out." Worriesome to most organizations is the fact that the entire Internet consists of unencrypted network traffic that can be intercepted at many different points.

Market, who is also a partner and practicing attorney at Cohen & Grigsby, is concerned that companies rely too much on the information on the Web: "We would no

strictly experimental, the movie industry giant takes the Web so seriously that Brenner has installed an internal Internet server as a central resource for the entire company. And, after only two months on-line, the central server has been packed with video and music clips, promotional material and general information by the company's motion picture and music entertainment groups.

The result? "We're being accessed by non-CUA employees more than 1,000 times a day," Brenner says.

MCA/Universal's foray into the Internet World-Wide Web began after a diligent search for the best way to deliver its content in an on-line, electronic format. "We're in the entertainment business, and we have a vision to use public networks as a way to deliver digital content," Brenner says.

About two years ago, an executive committee of senior management and division heads considered a number of alternatives including CompuServe and America Online, but concluded that "it's not easy to get content to the public through a commercial service," Brenner says. "Also, you don't necessarily have control of the content after giving it to a commercial service."

But after looking at the Web and Mosaic last summer, the executive committee decided that MCA/Universal could create an on-line service itself. "So we did it," Brenner says.

"Doing it" meant bringing in a TCP/IP T1 line and installing the appropriate hardware. Brenner's information systems group maintains all servers, connectivity and the underlying Web server software.

Thus Haase, technical consultant at MCA/Universal Information Services, said the value of this semi-centralized approach is that information systems are "maintained by the company, content is controlled and updated by the individual departments, and there are great cost savings in sharing the resources and equipment."

To date, three divisions have launched their individual Web services under www.mea.com, while Brenner and his staff develop general guidelines and rules for the service. Seven of the company's 12 divisions are expected to be on-line by April 1995.

Yet for MCA/Universal, this is only the beginning. Brenner intends to install NetStage Communications Corp.'s NetStage Commerce Server early this year to allow credit-card transactions and the sale of MCA/Universal products. Brenner says he also plans to develop "original content" for the Web. He would not be more specific.

'We're in the entertainment business, and we have a vision... to deliver digital content.' — MCA/UNIVERSAL CO. GEORGE BRENNER

ally, at which point it is delivered to its final destination inside or outside the company.

At Cohen & Grigsby, UUCP was hidden behind the CC-Mail interface, so the switch was completely transparent to the firm's 150 staffers. This setup costs \$50 a month to serve the entire staff. E-mail alternatives such as CompuServe and AT&T's Mailgate "substantially" more expensive, Sullivan says.

Cohen & Grigsby's use of Internet E-mail has become so pervasive that the firm now provides systems support to smaller clients who do not have their own internal support staff. According to Jeff

Although the firm is just beginning to establish its Web presence, attorneys are brainstorming about services such as an on-line legal service that will allow existing clients to fill out a Web form for submission to the firm. The form, which might initially be used to handle boilerplate legal tasks such as employment contracts, would be routed to a staff attorney who would draft a formal document and send it back to the client. Revision and review would subsequently be handled by E-mail.

But before that happens, Sullivan says, "a whole host of issues — such as Internet security —

—

MCA/UNIVERSAL INFORMATION SERVICES

IS STAFF DELIVERS DIGITAL

CONTENT TO THE PUBLIC

Though MCA/Universal Information Services considers its new Web server (www.mea.com) to be

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February 1 Issue



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The Open Software Foundation's Distributed Computing Environment (DCE) is touted as an all-encompassing technology for building next-generation distributed applications. *Computerworld Client/Server Journal* interviews several end-user organizations, including Charles Schwab & Co., to find out how it's working.

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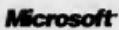
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Tom Robbin, V.P., Application/Strategic Architect, Core Cash & Security Systems, J.P. Morgan

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Panel:

Tavi Gal, Senior Vice President, Client/Server Systems, Bank of America

Robert Yellin, Chief Technology Officer, Legent Corporation

William Zeitz, President, Zeitz & Associates

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Panel:

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Chuck Parrish, General Manager, Mobile Data, GTE

Mike Radigan, Program Manager, USCO market-to-collection, Xerox Corporation

Sandy Sully, Vice President of MIS, 3Com Corporation

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Panel:

Michael Abbey, Database Administrator, Auditor General's Office of Canada

Ronald S. Elkin, Program Manager, Batelle Memorial Institute



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Jason K. Whitehair
Recruiting Manager/Systems Engineering
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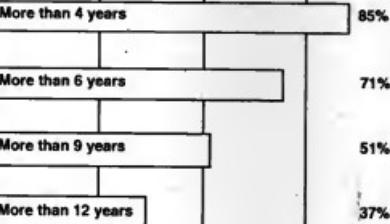
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"To generate sales for Across the Boards, a communications toolkit for developing cooperative applications, and pcMAINFRAME, a generalized micro-mainframe file transfer system, cSOFTWARE has been advertising in Computerworld Direct Response Cards almost from the very start. Now, based on our past success, we've also started to advertise pcPOWER, our newest file transfer system. Since all of our products facilitate mainframe-to-micro communication, we need to reach IS managers and technical support professionals on the mainframe side as well as end users on the PC side. That's why Computerworld Direct Response Cards, with their large audience of buyers most apt to need our products, are one of our primary advertising vehicles.

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Marketplace

SHELVING NET MANAGEMENT

NETWORK MANAGEMENT MAY BE A STAPLE OF MOST REQUESTS FOR PROPOSALS, BUT ANALYSTS ESTIMATE THAT ONLY ABOUT 20% OF BUYERS ACTUALLY USE THE TOOLS THEY GET

By Alan Radding

Water, water everywhere and not a drop to drink. Like the shipwrecked sailor's lament, administrators complain that the network/systems management problem remains unsolved despite the products available. The problem may not be a lack of tools but too many.

"Every vendor of networking equipment has its own management package to manage its own equipment. Administrators must learn each package, and there is no overall view," says Michael Howard, president of Infometrics Research, Inc., a research consulting firm in San Jose, Calif.

As a result, the situation can easily get out of hand in a big enterprise network that has many routers, bridges, hubs,

switches and such, each with its own management tool.

It has gotten so bad that some companies standardize on one tool and toss out devices that can't be managed by the selected tool. "It has become such a mess that we are getting rid of management tools" except for one, says John Scoggin, supervisor of network operations at Delmarva Power & Light Co. in Newark, Del. The problem is that "the tools take resources to maintain. There simply comes a point of diminishing returns," he says.

Many consultants say networks can be managed quite well with a minimum number of tools. "For 99.9% of the problems in a network, Ping is enough," says Al Cini, a senior consultant at Computer Methods Corp., a network integration specialist in Marlton, N.J. Ping is a basic Unix command that tells whether a machine connected to a TCP/IP network is attached and running.

While network management has become a staple of any request for proposal concerning internetworking devices, a variety of studies suggest it is a red herring that doesn't inter-

est buyers. Tom Nolle, president of CIMI Corp., a technology research company in Voorhees, N.J., surveys users regularly on the topic, and the results are the same. "Only one-fifth of the users asking for management products are actually doing anything with them," he says.

In studies cited by Cini, "30% of the network management products don't get used. They are never applied to the business mission." To add insult to injury, 10% of the products never make it out of the shrink-wrap, he adds.

And others...

Yet in other studies, users seem to beg for network management. When International Data Corp. in Framingham, Mass., asked buyers what they wanted in a backbone networking device, management capabilities came in second only to performance.

"In case studies we've done, [network management] is a required purchase item. But when the administrator installs the equipment, he doesn't even bother to install the management software," Howard says. Network administrators complain that the tools take too much effort to learn and are difficult to apply to their networks.

For example, when Lahey Clinic in Burlington, Mass., ran a large IBM network, it skipped NetView, which it regarded as complicated and costly. "As a result, we had limited management," says Rick Graham, director of systems integration and planning.

Where network administrators have a single tool that is easy to use, they are more likely to use it.

Some users and consultants say they hope the solution to multiple network and systems management tools will be integration under one tool, often referred to as the manager of managers. However, that hasn't

TAKE YOUR PICK

OPINION ON WHETHER TO BUY NETWORK MANAGEMENT TOOLS AND HOW MANY TO GET BEFORE OR WHO YOU ARE:

61% OF THE COMPANIES SURVEYED BY INFOMETRICS RESEARCH LAST YEAR USED SOME KIND OF NETWORK MANAGEMENT; 29% DON'T HAVE ANY TOOLS; AND 10% USED VARIOUS PLATFORMS, ACCORDING TO MICHAEL HOWARD, PRESIDENT OF INFOMETRICS.

95% OF THE TIME, ORGANIZATIONS DON'T NEED NETWORK/SYSTEMS MANAGEMENT, BASED ON THE RISK INVOLVED, ACCORDING TO YONI REILLY, PRESIDENT OF CINI. IN OTHER WORDS, THE MARKET ISN'T GREAT ENOUGH TO JUSTIFY THE COST.

KEEP SYSTEMS AND NETWORK MANAGEMENT TOOLS AT 5% TO 10% OF YOUR NETWORK/SYSTEMS MANAGEMENT BUDGET, ADVICE JOHN SCOGGIN, SUPERVISOR OF NETWORK OPERATIONS AT DELMARVA POWER & LIGHT. THE ONLY EXCEPTION, HE SAYS, IS WHEN THE COMPANY IS GOING THROUGH A MAJOR TECHNOLOGY SHIFT.

materialized. "It is a myth that users want a single management system for everything. That's just not how most companies are organized," Nolle says.

Scoggin, for example, countered his sights. "We had a manager of managers that we got with certain WAN devices, but it didn't work with other devices, so we abandoned that approach," he reports. Then he hopes for peaceful coexistence. "All I want to do is to have everything on the same console. The tools don't have to be tied together," he says.

By standardizing on a single management tool and router vendor, peaceful coexistence isn't hard to achieve.

Radding is a freelance writer in Newton, Mass.

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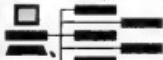
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Recognizing possibilities

Optical character recognition (OCR) software vendor Caere Corp. (CAER) hopes its recent merger with rival Calera Recognition Systems, Inc. will bring attention to both its stock and the OCR market in general.

OCR software helps translate scanned documents into workable computer files. Caere controls more than 70% of the OCR market. Analyst Kristy Horel at BIS Strategic Decisions in Norwell, Mass., said the merger is a good thing for everyone. "It will actually strengthen the OCR market, with other competitors like Xerox Imaging Systems, Inc. benefiting" because Caere now has the clout to educate people about OCR, she said.

John Svoren, an analyst at Red Chip Review in Portland, Ore., said Caere's stock should prosper from the merger in the long run. He said the two companies bring together complementary technologies, which can be used to develop more advanced products. And because Calera focused on OEM deals while Caere targeted retail channels, the combined firm will have a much broader marketing channel and customer base.

Caere shares hovered around \$45 for a long time after the merger news. Sween said the stock was slightly overpriced until it dropped back down to \$44 recently, possibly due to rumors of product rollout delays. On the other hand, Mary McCaffrey, an analyst at Alex. Brown & Sons, Inc. in New York, said the company's stock is "a buy" because its

Analysts agree that Caere will have to look beyond OCR to garner this success, however. Scanner and OCR software prices continue to drop, balancing Caere's huge market share with reduced margins. McAffrey noted that Caere is positioned to venture into the growing workgroup document management market with the recent release of its PageKeeper product.

— Tim Ouellette

Scan these markers

Carter's merger with Calera may create room for cost-cutting and a chance for higher-than-predicted earnings this year and next.

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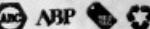
Stock price as of Jan. 19: \$4.75				
Earnings per share	\$0.05	\$0.36*	\$0.65*	\$0.90*
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HP unifies line

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a hasty. General availability of the delayed 10.0 appears to be slipping further. Company officials confirmed last week that while an early customer version is scheduled to ship this quarter, Version 10.0 will not be widely available until mid-year.

The product rollout (see box at right) begins this week with the announcement of a clustered, high availability Unix server. Each Unix machine is expected to run HPUX 10.0 and is based on HP's forthcoming PA-RISC 7200 chip.

Making things a little simpler

A unified Unix operating system will serve to bolster HP's open systems plans, users noted. "HPUX 10 should make life a bit easier," said David Suies, director of engineering at Black Clawson.

Eclipse warns:

Worldwide workstation revenue grew from \$10.3 billion in 1993 to \$15.3 billion in 1994



Source: Datapoint, Inc., San Jose, Calif.

Co. in Middletown, Ohio, which has 30 HP workstations, including two being used as servers.

"The biggest part of any network is the communications on that network, and soon there won't be any compatibility issues at all," Suies added.

Although only 25% faster than the 7100 chip now used in workstations and servers, the 7200 will allow multiple CPUs to act as an efficient SMP machine. The new chip is also bi-endian in design, meaning it can be adapted to run both Unix and Microsoft Corp.'s Windows NT.

Without Version 10.0's multithreading features — which farms out various tasks to CPUs — HP will be hard-pressed to create high-performance scalable systems, analysts said. (CNET Sept. 26, 1994.) So far, HP's T500 high-end Unix server, which ships with up to 12 CPUs, can make full use of only six to eight of those CPUs due to scaling problems, several analysts said. Bob Herwick, president of Hercules Capital Management in San Francisco, said he believes technical challenges may have caused the delays in HP/UX 10.0.

The Unix unification move is aimed at strengthening HP's bid to pass Sun Microsystems, Inc., as king of the Unix systems, said Bernard Guidon, general manager of HP's Workstation Systems Division. "We are definitely closing the gap, and we are expecting that in 1996, HP is going to be the clear No. 1 leader in workstations by revenues," Guidon said last week.

HP is indeed gaining market share, said Dominic Reebethan, an analyst at Dataquest, Inc. in San Jose, Calif. But Sun's sales are growing too, as the workstation market expands by 20% or more annually. What has changed in buying patterns is that users are taking open systems to heart and are no longer afraid to mix and match workstations from HP,

Sun, IBM, Digital Equipment Corp. and Silicon Graphics, Inc.

HP plans to further broaden its product line by superseding today's PA-RISC chips with microprocessors it is jointly designing with Intel Corp. Guidon said he

Many large HP shops will continue to purchase workstations and servers based solely on performance and functionality, said Joe Dugan, an independent consultant who worked on Northrop Grumman Corp.'s installation of I series Unix servers and 220 Unix workstations.

"We're in a refreshment mode now; so we'll take a look at what's out in the market that meets our needs," he said. Northrop's engineers also use HP RS/6000 workstations to run CATIA engineering applications.

Alarming at Sun

HP also hopes to

leverage its position as a \$25 billion vendor against \$85 billion Sun and its marketing power among loyal Sun users. This year, HP will aim market-

HP's upcoming products will include the following:

• High availability clustering

Software for HP 9000 Unix servers will be introduced today. HP's software and disk arrays will support Oracle's Parallel Server.

• HP UX 10.0

A version of HP's Unix operating system that supports multimedia and boosts SMP server performance. Expected in February.

• HP 9000 Series 700 Unix workstations

Based on the PA-RISC 7200 chip, in both uniprocessor and multiprocessor versions. Expected in March or April.

• HP 9000 Series 800 servers

Based on up to four PA-RISC 7200 chips. Analysts expect a four-way SMP server priced from about \$30,000. Expected in March.

• HP 9000 servers

Based on up to four PA-RISC 7200 chips. Some users believe these may replace current midrange Models 957, 967 and 987. Expected in early March.

envisions handheld devices, workstations, servers and high-end multiprocessing systems "in one single, unified family." Even so, many analysts doubt that products based on the HP/Intel chips will ship before 1997.

Yet some users seemed pleased with the status quo and see no need to emphasize a common architecture.

"We certainly have seen no problems, although it would be more profound if we were in a business environment where we were trying to mix [Model] 700 workstations and [Model] 900 servers," said Rob Nelson, a section leader at Los Alamos National Laboratory in Los Alamos, N.M., which uses stand-alone workstations.

ing efforts at several levels of corporate buyers. "Sun got started at the grassroots level and was perceived as the safe choice," said Nina Lytton, president of Open Systems Advisors, Inc., Ju Boston. "Now HP is saying, 'Hold your horses. We have something for the manager, something for the engineer, something for the manager and something for the CIO.'"

But confidence is very much a part of HP's strategy as well, Lytton noted. HP now supports Sun's QNX 4.0/RS/6000 networking software and leads migration support and consulting services to Sun shops installing HP systems.

"The way to gain market share," she said, "is 'not to go into someone's sandbox and start kicking.'

Client/server costs

CONTINUED FROM PAGE 1

it now adequately covers all the costs," Tung said. While his group can keep it track of some of the services provided, "we haven't been able to figure out how to do it from a CPU [utilization] or transactional basis," Tung explained.

Industry analysts said it is not too soon to tackle the chargeback issue and start justifying client/server spending.

"If you don't have some sort of chargeback mechanism in place, there's a good chance outsiders could come in and take away your business because you don't know what you are spending," said Bradley Hefrit, an analyst at Gartner Group, Inc. in Stamford, Conn.

In search of information

Some observers said users are clamoring for more information about chargeback in client/server computing. For example, the Financial Management for Data Processing Association, a 675-member organization in San Francisco, is holding a chargeback seminar series beginning Feb. 1. Terence Quinlan, the association's president, said the seminar will focus for the first time on chargeback in distributed environments because so many members are seeking information on it.

Without clear-cut chargeback procedures, some analysts recommend the "cable TV" method of charging users for IS services in a client/server installation. With this tactic, users pay a fee to hook up the system and then pay for additional services beyond the basics.

But the sum pickings in chargeback products for distributed platforms compound the difficulties for users. There are only a few products on the market today such as tools from Computer Associates International, Inc. and Compuware Corp. Legato Corp. in Herndon, Va., a long-time player in the bus-based chargeback software market, confirmed last week that its client/server chargeback product will not be released until sometime next year.

For now, many companies are either doing without a formal chargeback system or cobbling together a set of procedures to get by.

For example, Morrison-Knudsen set up a system to manage its client/server installation that charges for all hard costs — such as hardware, maintenance and support — to the end-user department. IS then charges hourly rates for additional labor.

The catch for many users, however, is the difficulty of accurately tracking costs in a distributed environment.

In the mainframe world, chargeback procedures were relatively simple — mainframe usage was all in one box — but they cannot be directly transferred to client/server environments. Instead, users must tailor methods to include desktop systems, network traffic and even electronic-mail us-

"The philosophies don't change," Quinton said. "It's who, how and what to charge. The wrinkle with distributed processing is a lot of the responsibilities that were once centralized are now decentralized."

Going without

At Vanstar Corp. in Pleasanton, Calif., for example, chargeback procedures were routine in mainframe computing, yet they are not being used in client/server implementations, said Terry Thornton, director of financial systems.

"The central box isn't controlling everything, so it is more difficult to track,"

Thornton said.

Thornton said another reason Vanstar has not yet implemented chargeback procedures is the lack of available tools. "They are almost nonexistent. So you would have to build something yourself and in client/server that is very difficult," he said.



How's the weather up there?

With the help of New West Software's (San Francisco) Small Mac Planet-The Real Pictures

World Atlas 2.0 CD-ROM, you can have an aerial view of the globe along with the ability to zoom in on individual streets in major world cities. An updated world map lets users hear the language spoken in each country and provides statistical information.

Before and after images of major environmental occurrences such as the Mississippi River flooding are also included in the \$39 package.

Top 10 signs your Web home page is not cool

- 10 Hot list is only lukewarm
 - 9 Links to your page keep using the adjective "leid"
 - 8 Disney wants to buy the rights to use it in "Mighty Ducks III"
 - 7 It's on Adam Curry's list of next home pages
 - 6 The Web Worm got bored and left
 - 5 It's condemned by the local housing authority
 - 4 The word "cool" is in the title
 - 3 Nancy Kerrigan says it's the corniest page she's ever seen
 - 2 The Geek Code was replaced by Geek C++ Code
 - 1 And this No. 1 sign your home page is not cool ...
- The access log shows tons of visits by Al Gore
Thomas Wallace Colhurst, Internet post

Great names in IS...

Roger Dev

Director of software development
Cabletron Systems, Inc., Rochester, N.H.

"Ruth" Perot

Speaker at Comfest for a new router product. His seminar is titled, "Routing Without Integration Is Just Plain Dumb."

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Main office; Framingham, Mass. (508) 875-0700 FAX: (508) 875-9311

24-hour tip line

Mid-Atlantic bureau, Rochelle Park, N.J. (508) 820-8555

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Inside Lines

No pink slips at Sybase

Talk that Sybase plans to lay off engineers in its development tools group in anticipation of bringing PowerSQL into the fold is "categorically false," said Bob Epstein, Sybase's chief technologist, last week. "Between the two companies, we have 500 positions open. There's plenty of work," Epstein said. Having passed the U.S. government's audit last month, Sybase's proposed nearly \$1 billion acquisition of PowerSQL is on track for a first-quarter close, he added.

Promises, promises

IBM may have promised Joe Formichelli for being ThinkPad supply problems, but "Ex" sounded like a relative term to at least one large user. The customer, who asked not to be named, said Big Blue promised him 500 550/C5 machines and has delivered fewer than 100. While the customer likes the ThinkPad just fine, he's ready to pull the plug on IBM for the other 1,000 or so notebooks he needs because of this latest experience in non-supply from the company.

What, no invite for Newt?

Sterling Software plans to host a user conference in May that includes the splash and celebrity traditionally associated with KnowledgeWare, which Sterling acquired last year. No less a point of light than former President George Bush will be on hand to speak, as will warrior Gov. Norman Schwarzkopf, according to a source at Sterling. Plus, Fran Turkerton, the former chairman of KnowledgeWare and now a Sterling board member, is rounding up his football buddies for a Hall of Famer's golf tournament. "We usually have kind of low-key shows," the Sterling source said, "but not anymore, I guess."

Hall of mirrors

The 90-byte Seagate Technology disk drives need by EMC in its most recent Symmetrix mainframe arrays are still not the fairest of them all when it comes to reliability. So EMC has decided to continue selling the arrays only in mirrored configurations, with half the capacity relegated to backup status. That cuts the high-end 5500 down from the advertised 10TB rate to a not-so-mighty-sounding 5000 bytes. The backup disks should be free, but one mirror trick is that customers who want more than 5000 bytes of real capacity have to buy a second Symmetrix box, analysts said.

Watch out for Sybil

IBM is going ahead with plans to support multiple-personality operating environments on future AS/400s, but it is getting more user-friendly about it after catching an earful of feedback from customers who do not want to see the midrange systems' integrated nature sacrificed on the altar of newfangled technology. The strategy has been fine-tuned so all the plumbing needed to run OS/2 or Unix programs on the AS/400 will be hidden in a set of compilers and APIs, according to AS/400 division officials. They said IBM still expects to start building its microkernel technology into the AS/400 next year despite a recent retrenchment of multiple personality plans at the client level [CW, Jan. 8].

As if Intel didn't have enough problems, last week, a wise guy posted a message on the Internet claiming the chip vendor had embedded self-destruct microcode in its Pentium processors that could cause the chips to explode without warning. The post wasn't taken seriously until another one appeared with the claim that the story had run on Nightline, that prompted multiple requests for more details. Finally, one enterprising surfer had the good sense to kill the thread and clue in gullible readers that the story was a joke. We let Intel winans' laughing... To pass along similar silliness or just a few good news tips, get in touch with Computerworld through our 24-hour voice-mail tip line at (609) 830-8555 or our toll-free number at (800) 647-6474. News editor Marylyn Johnson can be reached by phone at (609) 829-8179 or via the Internet at mjohnson@cw.com.

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